

# AMATEUR RADIO

JUNE 1963



Vol. 31, No. 6



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## OUR COVER

The inside of VK3HW and VK-  
3AMH looks like a "commercial"  
set-up. It is a credit to Australian  
Amateur Radio, and complements the  
previous cover photo of their aerial  
array.

## FEDERAL COMMENT

★

## A FUTURE IN ADMINISTRATION

Every Radio Amateur is deeply concerned about the future. Many  
vociferously clamor for preparations to be made for the battle to retain  
Amateur rights and privileges at the next I.T.U. Conference—extension  
of privileges now, or for this or for that action to be taken.

### WHO IS GOING TO DO ALL THESE THINGS?

In order to carry out the wishes of its members and properly represent  
the Australian Amateur, the W.I.A. must have fully manned Federal and  
Divisional Councils backed by active sub-committees consisting of qualified  
personnel.

There are some who claim that the old experienced members of  
these bodies are getting too long in the tooth and that young blood should  
be injected into the organisation.

We could not agree more; however experience indicates that enthus-  
iasm and zeal must be tempered with sagacity borne of experience.

The time was never more opportune for the formation of active  
working committees employing younger personnel to tackle our major  
problems and prepare to step into the shoes of the oldsters as they  
relinquish the burden.

What better way is there of achieving continuity of administration,  
tempered with the wisdom of experienced administrators?

Those members who are prepared to serve such an apprenticeship  
will enjoy the fruits of their labor in the part they play in insuring the  
future of both the W.I.A. and their fellow Amateurs. The administrative  
experience so gained will in itself be a valuable asset in everyday life.

FEDERAL EXECUTIVE, W.I.A.

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# A Broad-Band, Bandswitched, Crystal-Locked Converter

A. S. MATHER,\* VK2JZ

**A** CRYSTAL-LOCKED Converter provides a cheap and effective way of improving the performance of almost any superhetrodyne receiver.

This unit was made up to use in connection with my s.s.b. modified AR7 which has a Band C coil box, modified to allow it to tune from 3.5 to 4.0 Mc. through the complete tuning range of the dial, from approximately 500 to 0.

The 7, 14, 21 and 28 Mc. signals are heterodyned so they are tuned with bandspread on the 3.5 to 4.0 Mc. range of the receiver.

Thus we now have a double conversion superhet. with a crystal-locked high frequency oscillator, better image rejection, bandswitching, bandspread and greater stability as the 2nd h.f. oscillator is tuned from 3955 to 4555 Kc. for all bands.

Numerous articles have been written on crystal-locked converters and they are all basically the same with the exception of the type and frequency of the crystal oscillator.

It is hoped that the following article may be of interest to those wishing to improve their receiver performance.

## THE CRYSTAL-LOCKED OSCILLATOR

Four FT243 crystals with fundamental frequencies of 3.633 Mc., 3.500 Mc., 5.833 Mc. and 8.166 Mc. are used on their second overtone of approximately 10.8 Mc., 10.5 Mc., 17.5 Mc. and 24.5 Mc. to convert the 7 Mc., 14 Mc., 21 Mc. and 28 Mc. bands to the 3.5 Mc. to 4.0 Mc. tuning range of the receiver.

\*"Wolaroi," 14 William St., Singleton, N.S.W.

The harmonics above the fundamental are called the overtones of the fundamental.

Most magazines refer to 3rd overtone operation of say a 3.5 Mc. crystal as oscillation on a frequency a few kilocycles lower than its 3rd harmonic with no output on the fundamental or 2nd harmonic, that is 3.5 Mc. or 7 Mc.

I will use this convention as far as the mode of operation is concerned, but as the 1st overtone equals the 2nd harmonic, operation of a 3.5 Mc. crystal at a frequency of approximately 10.5 Mc. is the 2nd overtone and not the 3rd overtone as generally stated.

I will not attempt to discuss the theory of overtone crystal oscillators, which has been discussed before in "A.R."† but the most important fact is that when the feedback is correctly adjusted and the plate circuit tuned, oscillation at the series resonate frequency will take place at the 2nd overtone, which is a few kilocycles lower in frequency than its 3rd harmonic. However, as stated, only oscillation at this and higher frequencies is obtained and none at the fundamental and 2nd harmonic. So you can see the injection frequency is always 3.5 Mc. lower than the tuned frequency with the exception of the 7 Mc. band when it was approximately 3.8 Mc. higher and the receiver tunes backwards from 3.8 Mc.

This is a slight disadvantage, but there appears to be no satisfactory way of tuning the 7 Mc. band from 3.5 Mc. higher, as with the other bands, without using a 3.5 Mc. crystal on its funda-

mental and that puts a hefty 3.5 Mc. signal at the band edge.

Needless to say, using crystals on other frequencies and turning backwards or forwards on various receiver frequencies open other possibilities. It would be possible to use a 3.5 Mc. crystal with the oscillator coil tuned with switched condensers to oscillate on its 2nd, 4th and 6th overtone to give forward tuning at 3.5 Mc. on 14, 21 and 28 Mc., and backward tuning from the 2nd overtone at 10.5 Mc. to give 7 Mc. coverage from 3.5 to 4 Mc. on the receiver.‡

The value of the injection voltage would not be the same for each overtone as the voltage output will decrease as the overtone frequencies get higher, which could be a drawback. However, it has the advantage of saving three crystals and three inductances.

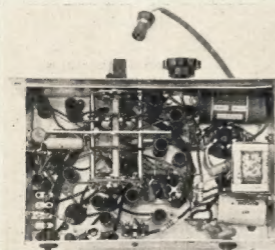
It should be obvious that unless considerable and, I think, unnecessary care is taken with the selection of the crystal frequencies, owing to the overtone operation being slightly lower than the 3rd harmonics, all band edges may not be on exactly 3.5 Mc. on the receiver.

## OVERTONE OPERATION

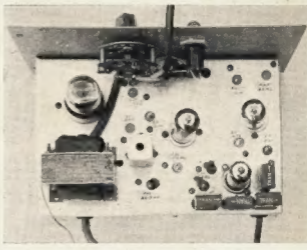
As stated before, overtone operation only of the injection crystal oscillator is most important, because if the signal you get at say 10.5 Mc. also appears at 3.5 Mc. and 7 Mc., then the possibility of spurious signals, birdies and images is greatly increased, as they can beat with the incoming signal and harmonics of the receiver h.f. oscillator and i.f. frequencies.

† Page 51, "QST" May 1950.

‡ Using Overtone Crystal Oscillators, "A.R." Aug. 1960.



Under-chassis view of VK2JZ Converter. Around SW1 are the various coils. Those nearest front panel are L1 and L2 for 14, 21 and 28 Mc. L3, L4 and 7 Mc. Below these are L5 for 11, 12, 13, 14, 21 and 28 Mc. L4 coils are located at rear of SW1 (1. to r.) 7, 14, 21 and 28 Mc. Mounted on right hand side of chassis is the h.f. choke.

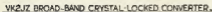


Above-chassis view of VK2JZ Converter. Grouped around the 6C4 oscillator can be seen the four crystals. Other valves (left to right): 6X5 rectifier, EF85 mixer, EF85 r.f. The switch shown is SW2, to the right of which is the pilot holder. Output i.f. is to right of power transformer.

Once the correct value of feedback is found, for one crystal, it should be OK for the remainder and only the coil slugs will have to be adjusted. It

\* With parallel 10 pF. condenser.

Remove any parallel fixed condensers and enough turns (about three-quarters of them) so the coil will resonate at 3.5 Mc. with the internal capacity of the mixer and its own slug. Remove the other coil and wind on about ten turns of No. 26 gauge enamelled wire. Some converters feed the mixer with a 2.5 mH. R.F.C. and take the output through a 0.01  $\mu$ F. condenser to the receiver. Whilst this would be high impedance, it would suit most of the older receivers.

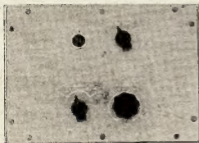


## R.F. STAGE

The r.f. stage is quite conventional and any high Gm tube such as the 6AH6, 6CB6 or 6BZ6 would be satisfactory. A EF85 or its equivalent, the 6BY7, is used here because its equivalent noise resistance of 1,500 ohms makes it an excellent tube for broadband operation and it is used extensively in t.v. vision i.f. channels.

A gain control is used in the cathode circuit and it is normally left in the maximum position except on very strong signals.

It should be noted that the signal-to-noise ratio delivered by the r.f. stage determines the overall signal-to-noise ratio of the receiver. Therefore, improvement in the noise figure on weak signals can be obtained by running the converter flat out and controlling the gain by r.f. control on the receiver, because as the gain of the r.f. stage of the converter is reduced, the Gm is reduced and the noise figure is increased.



Front panel of the VK4JZ Broadband, Band-switched, Crystal-Locked Converter. Controls: top right, converter in/out; lower left, band switch; lower right, r.f. gain. The pilot is seen in the top left.

## BROADBANDING

You will notice that the various coils resonate only with their own inductance, tube capacities and circuit stray. Some constructors may prefer to tune the grid circuits of the r.f. and mixer stages, but even if ganged this means another control and tracking problem and the gain is more than adequate now. I have not measured the signal-to-noise ratio, but it seems to be excellent. Although the number of turns for each coil is given, these are the values I started with, as suggested by VK2BK and some pruning will most probably be necessary. It was beyond me to count the turns after I had them mounted in the converter.

A g.d.o. is almost a must for any constructor and it will be evident that you will need to use one to get the coils right in the middle of the pass-band, particularly the 3.5-4 Mc. output i.f.t.

Be sure you wind them so they obtain the best possible effects from the slug tuning.

When the unit is operated the slugs can be adjusted for the best broadband characteristic before locking.

## CASE

The whole unit was made up in a standard metal case, 9" wide, 6½" high

and 5½" deep, with the two switches, gain control and pilot mounted as shown. The antenna terminals, output co-ax and h.t. transformer c.t. are all brought out the back. I used a 8X5 because I had one on hand. It would save considerable space and heat if two silicon diodes such as OA210s were used, or the required voltages could be taken from the receiver.

It is important to take the output co-ax from S.W.2 inside the case to the antenna terminals on the receiver, as no other pick-up must reach the receiver terminals other than from the converter.

I know all about being a beginner's wife, experience has taught me nearly all the do's and don'ts. A Radio Ham's wife needs to possess endurance, real stamina, courage in the face of great odds and enough cussedness to get her own way when it really matters.

My husband started off in a small way by owning and operating a set attached to the Flying Doctor base at Port Augusta. He has always been interested in radio and having whetted his appetite he got more and more enthusiastic as time went by. Two shifts later, one to Adelaide and the other to Port Pirie, he has really got into his stride. When we shifted from Adelaide to Port Pirie he was faced with the heart-rending (for him) decision that he would have to part with some of his gear (junk to the peasants). He still speaks in hushed tones as he tells fellow Hams how he wheeled out three wheel-barrrows full and gavel them away.

We went through agonies while he was studying for his Limited Licence. He used to attend talks given by one of the local Hams every Tuesday night then he would bend my ear for the rest of the week until I could have quoted Ohm's law in my sleep. As if this wasn't bad enough, he then took to studying turn about at home with another fanatic (that's what they are though they emphatically deny it). During these sessions no one was allowed to breathe.

At last the great night came. My husband had the shakes and his friend's ulcer was playing up, but off they went, supporting each other. No sooner was the exam. over than home to our place and over incessant cups of coffee (if your husband shows any interest in radio, immediately ask for an increased housekeeping allowance) went through every question. The friend was feeling despondent as he hadn't anywhere near completed the paper, but my better half had and he went from the heights to the depths and back up again as he stewed over what he had written.

Well then, of course, we had to wait for the results. He used to ring me up every morning and afternoon to ask if there was any sign of his results. For six weeks we waited, and believe

Shielding is used between r.f. and mixer bands of SW1, but it may not be necessary.

## CONCLUSION

No doubt constructors will have their own ideas as to components, crystal frequencies, number of crystals, placement of parts, etc. The circuit values are not critical and common sense variations from the values marked would be in order.

This is a description of a unit which overcomes most of the shortcomings of other converters I have used and an old receiver can be made capable of greatly improved performance. ●

# UPPER SIDEBAND-XYL TYPE

me they were the longest six weeks of my life. Then at last the letter came that said he was the possessor of a Limited Licence.

Well, if he'd won the lottery he could not have been more pleased. He danced around the kitchen, whizzed the children, hugged me, laughed, joked, stood up, sat down, and generally carried on like he'd taken leave of his senses.

I thought things would quieten down then, but no, he had to get a receiver and transmitter on the air and build this, that and the other. It's impossible to listen to our radio inside for drilling noises and my cake tins disappear to act as cases for various converters, etc., and to cap it all he's had me out doing a balancing act on his shoulders, cutting wire so that he had enough to put up an aerial. I might add I get shaky on a chair.

Now he's learning Morse and I'm going to petition that it be admitted as grounds for divorce.

He has now taken on being the Secretary of the local Radio Club. Of course you know who does all the typing, etc., and most of the running around. He hasn't got the time!

Well I guess I'm stuck with him. I took him on for better or worse, but surely it can't get much worse than this.

If you have a husband who is just starting to take an interest in being a Radio Ham, I suggest that you steer him to other interests, before it's too late.

—XYL, VK5ZEG.

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# A SWEEP GENERATOR FOR 455 Kc. I.F. ALIGNMENT

B. L. McCUBBIN,\* VK3SO, M.T.E.T.I.A.

TO those familiar with t.v. alignment techniques the sweeper is an essential tool. No other method permits the rapid accurate setting up of the i.f. response curve possible with a sweeper, yet we nearly all stick to the time honoured method of aligning our receivers and steam radio sets with a signal generator and output meter.

The piece of equipment to be described can be built mainly from the junk box. Most Hams will not need to shop around for anything but the Semi Cap.

The accepted type of sweeper as used for t.v. work generates its sweep at v.h.f. and this is then heterodyned to the desired spot. The author's aim was to directly sweep a 455 Kc. oscillator, thus making the equipment as simple as possible.

Many possible methods of sweep were tried and discarded for various reasons. One, which looked very promising, was the Wobulator available ex disposals. This device has a metallic diaphragm which, unfortunately, suffers from fatigue and does a "King's Bridge" after a few hours work.

The saturable reactor type is not sufficiently linear for really good results.

Motor driven condensers, also, are difficult to make linear and are difficult to synchronise with the c.r.o.

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● With the increasing interest in s.a.b. and the need for accurate setting up of filters and selective I.F. channels the common method of laboriously graphing response curves is too much of a time waster. This sweeper will enable you to do in minutes what previously required hours.

This leaves us a little device which came on the market a couple of years ago. It is called a Semi Cap and looks like a silicon power diode. When properly used it will vary its capacity over a range of 3 to 30 pF. and can easily be controlled with sinusoidal a.c.

A sweeper generator to fulfil its requirements must be linear over the full swept range, must be capable of synchronisation with a c.r.o., must have variable sweep width and controllable output.

The first requirement is met by the semi cap in that the capacity variation is linear with applied voltage.

The second requirement is simply achieved by using 50 cycle a.c. for both modulation and c.r.o. sweep.

The use of a.c. for this purpose introduces a further complication in that the i.f. under test is swept in both directions and exact superimposition of the

forward and return trace is difficult. This is simply overcome by keying the oscillator with a 50 i.p.s. negative going square pulse of half cycle duration. Control of the output is gained by using a medium cut-off r.f. pentode as an electronic attenuator.

Low impedance output is obtained by the use of a cathode follower output. If high level output is desired, it can be taken direct from the attenuator anode.

There are three controls on the panel. These consist of a phase shift for the c.r.o. X amp. drive, sweep width control and output control.

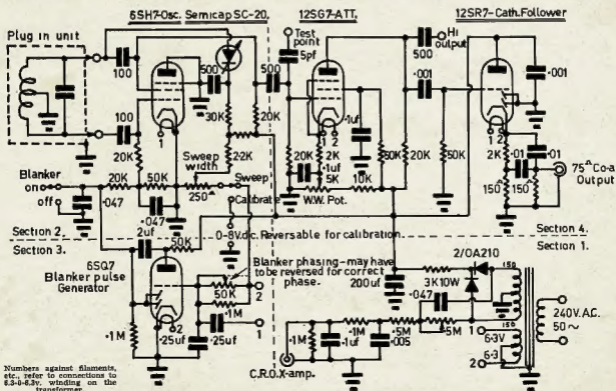
A second phase shift network will be seen in the grid circuit of the 6SQ7 blanking pulse generator. This control once set needs no further adjustment and can be mounted in any convenient position.

All valves used in the r.f. section are of the metal variety—because they were on hand and do not need screening.

## THE COIL

The coil is made plug-in and has its own shield can. It consists of two bobbins from an old 455 Kc. i.f. tranny pushed close together, the junction between the two bobbins being a convenient centre tap and is earthed.

N.B.—The centre tap on the coil is not necessary for the operation of the



Numbers against filaments, etc., refer to connections to 6.3-0-6.3v. winding on the transformer.

oscillator. Its function is to complete the circuit for the semi cap bias and modulating voltage.

The coil is tuned by a 50 pF. mica condenser which brings the frequency down to low, so a brass slug is used to reduce inductance and hit the required 455 Kc.

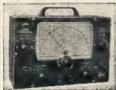
The use of plug-in coils makes other frequencies easily available if required.

#### CIRCUIT

The power supply and phase shifting network for the c.r.o. X amp. drive is perfectly straight forward and should need no explanation.

The oscillator should need no explaining except for the queer hook-up of the tube. This was done to reduce anode current.

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The heart of the device, the semi cap modulator, is a modified form of silicon diode and when a voltage is applied changes take place within the barrier which vary the effective capacity of the device. There are some catches, however. The applied voltage must always be in the back direction, otherwise current will flow. Therefore it becomes necessary to superimpose the a.c. modulating voltage on to a d.c. bias of such magnitude that the cathode end of the semi cap never goes negative. In this case the author used 9v. d.c. and a maximum of 6.3v. a.c. This gives a range of approx. 18.5v. which is adequate for the purpose. 9v.  $\pm$  6.3v. r.m.s.

The method used of adding the a.c. to the bottom of the bias supply causes a small shift of centre frequency with change of range, but, since the range is usually set and left, this does not matter.

In the blanking pulse generator, a.c. is applied to the grid of the 6SQ7 and during the positive half-cycle the tube saturates, whilst during the negative half-cycle it cuts off. This produces a step change in the anode voltage which is passed on to the diode section where it is squared up. This negative going pulse is not quite half a cycle in duration and because of this, the sweep pattern has a slight curl at each end. This is of very slight consequence and can be disregarded.

The electronic attenuator and cathode follower should not require any explanation, apart from the fact that R.C. coupling is used throughout.

The reason for this is that to be of any use a sweep generator must not only produce a change of frequency which is linear with time, the output level must remain constant through the entire swept range.

Therefore tuned circuits and even r.f. chokes, anything in fact that can possess a response curve of its own, must be left out of the amplifying and

attenuating circuits. Valve anode loads are kept low to ensure linearity.

So much for the description of the circuit and the reasons why these things are so. Nothing now remains but to add a few notes for the constructor.

Choice of valves. For the oscillator and following stages, any tubes that have a remote relationship with the ones used in the original version should work except that the r.f. pentode used as attenuator should not be of the remote cut-off type. The bias required to reduce the output to zero will be excessive.

The best layout for the oscillator, attenuator, etc., section is a straight line, starting with the coil at the rear of the chassis and progressing forward through the stages, or, alternatively, the same line-up across the chassis. Any line-up which puts the output circuit near the oscillator should be avoided as this will lead inevitably to a leakage of r.f. from oscillator to output and will spoil the operation of the attenuator.

For the blanking pulse generator the choice of valves is strictly limited, the 6SQ7 or 6AV6 being the best choice here. Tubes with lower  $\mu$  are unsatisfactory unless the grid drive is raised to very high levels.

Silicon diodes were chosen for h.t. rectification because the power transformer was very small and the saving of a few watts of filament power was important. If you use a larger transformer there is no reason why a thermionic rectifier should not be used. Similarly, the 200  $\mu$ F. filter condenser was used only because it happened to be available. A normal type filter using a choke and a pair of 8  $\mu$ F. electrolytics would serve equally well.

The use of the 3,000 ohm resistor as a filter element reduces the on-load h.t. voltage to 80, but this is quite sufficient for the purpose. In fact upon testing the effect of raising the volts to 200, resulted in no noticeable effect on performance. True there was more output but this only meant that the attenuator had to be backed off to get the pattern back on to the c.r.o. screen.

One further note to add here is that marking techniques, as used for t.v. alignment, are unsatisfactory at this low frequency and possibly the most satisfactory method is to calibrate the sweep by applying a reversible d.c. voltage to the sweep width pot. and calibrating the sweep range up and down, remembering to convert from r.m.s. to peak values when converting the calibration back to a.c. Remember also that a separate calibration will be required for each coil if you decide to make coils for other frequencies.

For those who use i.f. frequencies lower than 455 Kc. you will find that a single semi cap will not produce the required range of sweep, even two in parallel may not be enough. The best solution to this problem would be to add a v.f.o. and mixer and heterodyne the sweep to the desired frequency.

It is felt that the foregoing has got a bit long winded for one issue of "A.R." so will QRT now. If there is sufficient interest another article will be prepared on use of the sweeper. ●

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# The Overtone-Harmonic Crystal Oscillator\*

FRANK C. JONES, W6AJF

THE odd name of this crystal oscillator is an attempt to classify its unusual operation. Nearly all oscillators either work towards a harmonic output of the fundamental frequency of the crystal, or at an overtone frequency of this fundamental. This new oscillator does both; it oscillates at the third overtone of the crystal, then multiplies to the second or third harmonic of this overtone frequency. One triode tube or one transistor does the usual work of two in the design of crystal controlled v.h.f. or u.h.f. converters for receivers.

The circuit shown, Fig. 1A, is about as simple as can be designed, considering the functions involved. The circuit oscillates at the overtone frequency, 43,333 Mc, for example, in the cathode of the 6AK5. The values of L1 and C1 are not critical but should resonate at from 20 to 30 Mc. when using third overtone crystals of 35 to 48 Mc. L1 varied from 1 to 10 microhenrys in the test circuits with a small variable condenser of 5 to 30 pF. for C1. It was found that values near 1 microhenry were too small for some tubes and crystals. A 4 microhenry radio frequency choke coil seemed to work effectively with all overtone crystals in the range tested (from 20 to 48 Mc.). The lower frequency crystals required a little increase in C1 value for maxi-

● The old fashioned "oscillator string" in v.h.f. converters may be a thing of the past thanks to this new oscillator circuit. An ordinary overtone crystal may be used to provide outputs in the 100-150 Mc. region with only one tube or transistor. An excellent 2-metre converter is described using the new circuit.

tuned to the output frequency, lightly coupled together with about  $\frac{1}{2}$  pF. coupling capacity. The second tuned circuit would then be coupled to the mixer. The added selectivity at 130 Mc. would add 20 db. or more of attenuation to the undesired second and fourth harmonics, 86,666 Mc. and 173,333 Mc. A single high Q circuit at 130 Mc. will do a fair job, but two circuits make the problem easier to solve.

Many different tubes were tested in this circuit. The two types that produced the greatest output voltage at 130 Mc. were a 6AK5 triode-connected and a 6CW4 nuvistor triode. An arbitrary value of  $\frac{1}{2}$  watt input was chosen, in comparing tubes. A variable B+ supply and 0 to 5 mA. plate current meter were employed. In general, the triodes with highest Gm at low values

The transistorised circuit of Fig. 1C functions in the same manner with very good third harmonic output at 130 Mc. when using third overtone 43,333 Mc. crystals. A diode r.f. voltmeter connected across the collector circuit, L2-C2 indicated output voltages of from 1 to 5 volts peak when using an 8.4 volt battery supply. This was less than half as much as obtained from a 6AK5 but the input power was considerably less than one half as much. This indicates better system efficiency for transistors, even neglecting tube heater power loss.

Several types of Philco transistors were tested in the circuit of Fig. 1C. The surplus type marked T2040, supposedly a 250 Mc. cut-off type, gave about twice as much 130 Mc. output as other types tested. No complete measurements were made as to exact input and output power. The 2N1745 transistor worked as well as the 2N1742 and 2N1744 so at the price differential, the 2N1745 had preference. A 50 Mc. cut-off type 2N1728 would produce some output at 130 Mc. but only about one-third as much as a 2N1745. Since the circuit was set up for 130 Mc. output, transistors designed for v.h.f. or u.h.f. are necessary.

In Fig. 1C, the connection between L1 (4 microhenrys) and R1 should be bypassed as shown. If no bypass is used, R1 will offer enough impedance at the fundamental frequency of the crystal (approximately 14.5 Mc. for 43,333 Mc. overtone crystals) so oscillation will take place at about 14.5 Mc. The 130 Mc. output would then be greatly reduced. A radio receiver was used to check on 14.5 Mc. and 43,333 Mc. oscillation. The latter frequency is necessary since the transistor or tube only has to multiply by three. Asking it to multiply by nine is too much!

The output circuits shown do not indicate any method of coupling to another circuit or to a mixer. The usual forms of inductive or capacitive coupling are suitable.

Overtone crystals are low-power type devices, so are suited for use in receiver converters where the r.f. power requirements are usually less than a milliwatt or two. When this circuit is used in a transmitter it should be followed by a high gain amplifier since an attempt to get a good fraction of a watt from this system will lead to crystal overheating and poor frequency stability. As long as the required output is in the low milliwatt region, excellent frequency stability can be obtained for either receiver or transmitter circuits.

## PROTOTYPE TWO-METRE CONVERTER

The 144 Mc. converter shown in Fig. 2 was built and used for a few weeks. It had good gain and low noise characteristics but was difficult to adjust properly. Because of the loss in the diode mixer, gain has to be added in

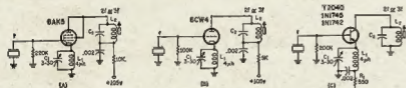


Fig. 1.—The Overtone-Harmonic Crystal Oscillator using a standard tube (A), a nuvistor (B), and a transistor (C). Third overtone crystals in the 35-48 Mc. range require L1 and C1 to resonate between 20 and 30 Mc. Output tank L2-C2 should resonate at desired 2f or 3f freq.

mum output at the second or third harmonic of 40 to 96 Mc. and 80 to 144 Mc., respectively. The values of C2 and L2 should resonate at the desired output frequency with either C2 or L2 being variable in order to take up the tube capacity and the detuning effect of C1.

In the writer's tests the main work has been done with 43,333 Mc. third harmonic crystals producing 130 Mc. output for coupling to a mixer. This provides the usual 14 to 18 Mc. i.f. output for the 144 to 148 Mc. Amateur band. Since the tube or transistor does produce harmonics, the Q of L2-C2 should be as high as practical design will allow. Otherwise undesired harmonics will reach the mixer circuit and produce spurious signal responses from strong signals well outside of the desired Amateur band.

Good design would seem to indicate the use of two medium Q circuits

of plate current functioned best in this circuit. The 6AK5 and the 6CW4 produced from two to three times as much output at 130 Mc. as could be obtained from over a dozen triodes tried. Tubes such as 6BH6 and 6AU6 functioned fairly well when operated as screen grid tubes with the screen tied to the plate coil by-pass condenser. On the other hand, 6AK5s gave more output as triodes than as screen grid tubes in the tests to date.

This circuit requires good active overtone crystals for best results. Ten fundamental frequency crystals at about 11 Mc. were available for test. About one third of these would oscillate at the third overtone and produce a small output near 130 Mc., the fourth harmonic of the overtone frequency. The cathode feedback system is not a very efficient means of making a crystal oscillate at third overtone, so regular overtone crystals are necessary and tubes such as the 6AK5 or 6CW4 are preferable.

\* Reprinted from "CQ," February, 1965.

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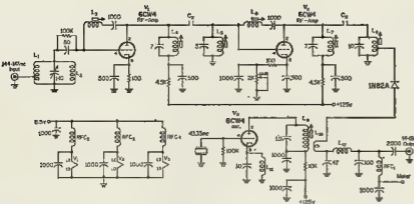


Fig. 2—An experimental two-metre converter employing the overtone-harmonic crystal oscillator to produce 130 Mc. local oscillator output from a 45.333 Mc. overtone crystal. This circuit, although usable is not the ideal since the inductive method of neutralisation used is quite critical. A more practical circuit is shown in Fig. 3.

Cx—Gimmick capacitors. See text.

L1, L2—4 turns 18 gauge enamel, 5/16 in. diam., 1/4 in. long top 1/2 turns from ground.

L3, L5—Neutralising coils 18 turns 26 gauge enamel, 3/16 in. diam., 3/8 in. long on ferrite slug coil form.

L4, L6, L7, L8—4 turns 18 or 20 d.c.c., 1/4 in. diam., 1/4 in. long on ferrite slug coil form. Centre tap L8 only.

some other part of the converter when it is to be used with moderate gain communication receivers. One r.f. stage and one i.f. stage in a converter unit would be much less regenerative than one with two r.f. stages, but would have less image rejection. From four to six tuned circuits in the 144 Mc. band are needed to reduce image signals to a low value when using the 14 to 18 Mc. i.f. tuning range in the main receiver.

The two stage converter shown here has five tuned circuits with an operating Q of 15 or less. The input circuit for the best noise figure should be operated at low Q and tuned to the low side of the band or even below the band, so its image rejection effect is nearly lost. This doesn't mean that the tuned circuit without antenna and grid loading shouldn't be high Q. Heavy wire in the coil also more effectively grounds very strong input signals directly in the i.f. range of 14 to 18 Mc. A high Q here and in the other circuits, compared to the loaded Q, means less loss of the desired weak two-metre signal.

This converter has two nuvistor r.f. stages with inductive neutralisation, a 1N28A diode mixer and a single nuvistor crystal oscillator. The inductance neutralisation system is critical in adjustment even in one r.f. stage and becomes a real chore with a two-stage system. The three slug tuned circuits in each stage have to be experimentally adjusted and the degree of coupling into and out of each stage has to be varied in order to cover several megacycles bandwidth. The neutralising coils from grid to plate are always adjusted for minimum signal feed-through from a signal generator and without plate voltage applied to the r.f. stage. The r.f. coils are peaked for maximum signal. These adjustments seem to interlock and since inductance neutralisation of this type is theoretically only perfect at one spot frequency, the problem of getting several mega-

L8—7 turns 22 enamel, 1/4 in. diam., 1/4 in. long on ferrite slug coil form.

L10—1 turn link of hook-up wire on L8.

L11—4 p.H. r.f. choke.

L12—3 p.H. r.f. choke.

RFCl—0.5 m.H. r.f. choke.

RF2C, RF3C, RF4C—10 turns hook-up wire closewound, 1/16 in. diam.

cycles bandwidth is not easy. It took the writer several hours work to get about three megacycles bandwidth with stable operation in the unit shown here. The coupling capacitors between pairs of tuned circuits had to be adjusted also as well as antenna coupling tap and diode mixer tap. Shield partitions between r.f. stages did not seem to be of much use since the coils were spaced well apart and the bypass condensers, etc., in each stage were stacked up in the space between grid and plate circuits. The unit was built on a piece of copper-clad bakelite 2" x 6" in size.

## A PRACTICAL CONVERTER

This unit was finally discarded in favour of the unit illustrated in Fig. 3. A change in s.w.r. in the antenna feeder with weather changes or pointing the two metre beam antenna into another nearby antenna or tree seemed

to upset the input r.f. stage on the first unit enough to cause r.f. oscillation. The two stages of r.f. also produced problems when a new high powered two metre transmitter came on the air nearby. The intermodulation effects were bad and the modulation rode in on carrier signals across the whole two metre band.

The converter shown in Fig. 3 has much better stability with some sacrifice in image rejection. The overall gain of the two converters was comparable and the noise figure about the same, however the adjustments in the one r.f. stage unit were easily made and the bandwidth was greater. The gain over the whole two metre band was much more uniform and changes of antenna s.w.r. had no adverse effects on regeneration, only on noise figure.

The unit shown here was tried with inductive neutralisation but due to spot frequency effects, neutralisation was not effective over the whole two metre band unless the operating Q of the tuned circuits was reduced to such a low value that image rejection became poor. Capacitive bridge neutralisation of the triode r.f. stage has a nice wide bandwidth and the operating Q could be made high enough so the four tuned circuits produced over 60 db. of image rejection.

The nuvistor mixer has considerable gain as compared to quite a bit of loss in a diode mixer, so one r.f. stage produces enough overall converter gain for most communication receivers tuning the range of 14 to 18 Mc. One r.f. stage with a gain control, especially if a remote cut-off type 6DS4 nuvistor is used in place of a 6CW4 nuvistor, takes care of intermodulation problems from nearby two-metre stations. This gain control, a 2,000 ohm potentiometer, is internal to the converter in order to use it if needed when other local stations come on the air.

This converter, on a 2" x 6" copper-clad bakelite strip, was mounted in an inverted 17" x 6" x 3" chassis in back of the communication receiver. Several other similar converters for other Amateur bands were mounted in this chassis along with a small regulated power supply delivering 105 volts up

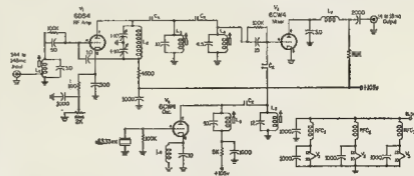


Fig. 3—A practical 144 Mc. Nuvistor Converter using the overtone-oscillator. With this circuit, a noise figure on a par with a 417A Converter can be expected. All capacitors are in pF. and all resistors are 1/2 watt.

Cx—Gimmick capacitors. See text.

L1—5 turns 20 d.c.c., 1/4 in. diam., 1/4 in. long on ferrite slug coil form.

L3—8 turns 18 gauge enamel, 1/4 in. diam., 1/4 in. long, air wound.

L3, L4, L5, L6—4 turns 20 gauge d.c.c., 1/4 in. diam., 5/16 in. long on ferrite slug coil form.

L7—20 p.H. t.v. video peaking coil.

L8—4 p.H. r.f. choke.

RFCl, RF2C, RF3C—10 turns hook-up wire, close wound, 1/16 in. diam.

to 20 mA. of plate power and 6.3 volts a.c. up to 1 ampere for heater circuits. A two section switch changes heater supplies and i.f. outputs to the receiver. Each converter connects to its own antenna so no switching is required on the inputs.

In testing this converter of Fig. 3 a grid dip oscillator is useful in aligning the tuned circuits to the approximate frequency. The four r.f. circuits were aligned to about 145 or 146 Mc. and the two oscillator coils adjusted to 130 Mc. before connecting the unit to a power supply. The r.f. stage plate tuning condensers were adjusted for about equal capacitances in this step. A test signal generator in the two-metre band is used in the remaining tests. The unit is then connected to the power supply with the r.f. gain control dis-

connected wire one or two twists may be needed.

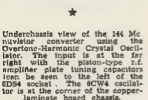
A larger capacitor of from 0.68 to 1.0 pF. is needed for coupling between the r.f. plate circuit and the next slug tuned circuit since the circuit is approximately centre-tapped by the two tuning condensers and associated shunt capacities. Neutralising is accomplished by adjustment of each plate condenser running one in and the other out by equal amounts so as to maintain correct two-metre resonance. By unbalancing these two capacitors, a fixed 10% ceramic 1 pF. capacitor can be used to neutralise the nuvistor triode grid to plate capacity of about 0.9 or 0.95 pF. If both plate condensers are adjusted simultaneously in opposite directions one can watch the receiver S meter indication for best neutralisa-

The mixer plate circuit is coupled to the main receiver through a fixed tuned pi circuit consisting of a small 17 to 20 microhenry peaking coil and two capacitors. The ratio of these capacitors should be 5 or 10 to 1 between the low impedance side and the plate or high impedance side. The 3 pF. capacitor plus tube output capacitance, etc., adds up to about 5 or 6 pF. A two or three foot length of RG-59U coax line from the converter to the receiver will form the larger capacitance of the pi circuit. If the lead is shorter than this, a small capacitor can be connected across the output jack to build up the capacity to around 50 pF. If larger capacities are used with a smaller peaking coil to resonate at the middle of the r.f. range, the mixer output will not have as good a bandwidth. The values used in Fig. 3 produce a fairly flat 4 Mc. bandwidth.

The converter has the same noise figure as one with two 5842/417A triodes in a cascode stage and a triode-mixer converter in comparison tests with a diode noise generator. The 5842 tubes were in reasonably good condition in a converter normally used for two metre DX work.



Overall view of the 2 metre converter showing parts placement. The three objects placed among the slug tuned coils and capacitors are feedthrough type capacitors used in this case as bypasses. Input is at the right.



Underchassis view of the 144 Mc nuvistor converter using the Overtone-Harmonic Crystal Oscillator. The input is at the far right with the piston-type r.f. amplifier plate tuning capacitors (see to the left of the 6D54 socket). The 6CW4 oscillator is at the corner of the copper-laminate board chassis.



connected entirely. A strong signal input will produce a signal in the i.f. output range if the crystal oscillator is functioning.

Fortunately this type of oscillator has a fixed oscillator circuit for the 43.333 Mc. overtone crystal so if the wiring is correct it will oscillate weakly at 43.333 Mc. in the cathode and grid circuits of the nuvistor oscillator tube. The plate circuit and its loosely coupled circuit are then peaked to produce maximum signal in the receiver from the test signal generator. Two tuned circuits of moderate Q were used to make sure that only the third harmonic of 43.333 Mc. (130 Mc.) was coupled into the mixer grid circuit. Too much oscillator injection voltage will usually produce spurious responses somewhere in the 14 to 18 Mc. output range; too little reduces the converter gain and causes some loss in noise figure also. The "gimmick" coupling condensers, short pieces of insulated hook-up wire are twisted together to produce coupling capacitances in the range of 0.25 to 1.5 pF. A 0.5 pF. capacitance requires a single twist with small hook-up wire but with small conductor heavily in-

tion. For any one setting on one condenser, the other is adjusted for maximum S meter reading. Then adjust in small steps until the S meter reading is at a minimum. The unit shown was adjusted in this manner. Then when the r.f. gain control lead was connected and the gain control set at zero resistance, a 40 db. increase of signal resulted—about seven points on the meter.

The input circuit and antenna tap are always adjusted for best signal-to-noise ratio or noise figure. This means tuning this circuit not for maximum gain, but for best noise figure. The circuit will be set near 144 Mc. for best noise figure over the 144 to 148 Mc. range. The two slug circuits between the r.f. stage and mixer are adjusted for best average overall gain in the converter over the whole two-metre signal range. A diode noise generator or test signal generator can be used for this purpose while tuning the main receiver over the range between 14 and 18 Mc., corresponding to r.f. signal inputs between 144 and 148 Mc. The grid leak condenser in the r.f. stage is only for tube protection when using a high powered transmitter nearby.

## TECHNICAL ARTICLES

Readers are requested to submit articles for publication in "A.R." in particular constructional articles, photographs of stations and gear, together with articles suitable for beginners, are required.

## W.I.A. D.X.C.C.

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

### PHONE

Call No.	Cer. Cnt-ries	Call No.	Cer. Cnt-ries
VK1RU	3 381	VK1SWL	14 211
VK1AB	43 275	VK1ATN	36 204
VK1BK	45 274	VK1ER	18 198
VK1AHO	21 248	VK1RW	22 194
VK1FJ	21 247	VK1GB	20 183
VK1KW	4 211	VK1JZ	61 180
Amendments:			
VK1TO	48 129	New Members:	
VK1AGN	35 107	VK1JTL	95 100

### C.W.

Call No.	Cer. Cnt-ries	Call No.	Cer. Cnt-ries
VK1KB	10 210	VK1AGH	71 240
VK1CX	20 204	VK1RF	68 230
VK1QL	8 277	VK1FHF	18 228
VK1FJ	29 277	VK1BZ	8 223
VK1AGH	19 268	VK1CX	23 220
VK1RU	18 240	VK1ER	6 219
Amendments:			
VK1XB	75 208	VK1KS	74 138
VK1JL	42 200	VK1ARX	68 209
New Members:			
VK1TL	78 121		

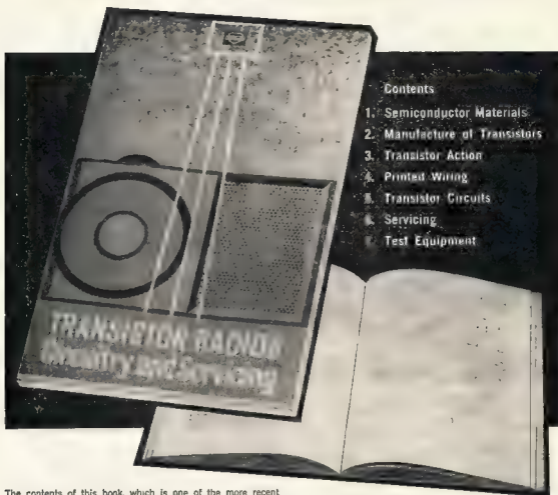
### OPEN

Call No.	Cer. Cnt-ries	Call No.	Cer. Cnt-ries
VK1ACK	6 203	VK1NC	7 200
VK1RU	6 200	VK1RG	3 200
VK1FJ	38 205	VK1JA	43 232
VK1BK	378	VK1ER	7 223
VK1AGH	23 271	VK1BZ	4 221
VK1AHO	78 271	VK1SWL	68 220
Amendments:			
VK1TL	85 192		



# TRANSISTOR RADIOS

## Circuitry and Servicing



### Contents

1. Semiconductor Materials
2. Manufacture of Transistors
3. Transistor Action
4. Printed Wiring
5. Transistor Circuits
6. Servicing
7. Test Equipment

The contents of this book, which is one of the more recent Mullard publications, includes a simple explanation of the function of the transistor, the complex processes involved in transistor production, care and methods of repairing printed wiring boards, detailed descriptions of circuits likely to be encountered in transistor radios and the test equipment required.

Practical considerations are emphasised throughout the book, which is priced at 5/3, plus 8d. postage, and is available from most booksellers and from Mullard Offices and Distributors throughout the Commonwealth.



Mullard-Australia Pty. Ltd., Box 2116, G.P.O., Sydney

Please send me \_\_\_\_\_ copies of 'Transistor Radios Circuitry and Servicing' for which I enclose \_\_\_\_\_ remittance, being 5/3, plus 8d. postage per copy.

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# ROSS HULL MEMORIAL V.H.F. CONTEST 1962-63 RESULTS

The Federal Contest Committee takes pleasure in presenting herewith the results of the 1962-63 Ross Hull Memorial V.H.F. Contest. Many comments have been received regarding the Contest rules and the scoring system and the Contest Committee hereby acknowledges those who so contributed. It is the intention of the Contest Committee to sum up all comments submitted by contestants and if warranted submit a recommendation to Federal Executive. At the same time, contestants must realise that it would be impossible to compile a set of rules that would be one hundred per cent. acceptable to everyone, and so a compromise has to be made somewhere along the line.

Honours for this year go to VK4ZAX whose mammoth score of 8,797 points was indeed a really fine individual effort. Our congratulations also to the other award winners, and in conclusion we wish to thank all those contestants who submitted logs.

—Federal Contest Committee, W.I.A.

## TROPHY WINNER

VK4ZAX—D. R. Horgan ..... 8797 pts.

## AWARD WINNERS

### Section A—Transmitting, Open

VK3AAU—D. D. Tanner ..... 381 pts.  
VK4BZ—D. B. Hughes ..... 2824  
VK5TN—B. G. Tideman ..... 1867  
VK6VV—B. J. Clarke ..... 3150  
ZL3RK—T. J. McKenzie ..... 1500

### Section B—Transmitting, Phone

VK1VP—E. Penikis ..... 1068 pts.  
VK2ZCF—R. C. F. Norman ..... 4393  
VK3NJ—K. H. Meslin ..... 1277  
VK4ZAX—D. R. Horgan ..... 8797  
VK5ZDR—M. J. McMahon ..... 5102  
VK6ZA—W. J. Howse ..... 1824  
VK7ZQA—W. J. Emmett ..... 1955  
VK9AU—R. A. J. Taylor ..... 5012  
ZL1AKY—G. S. Read ..... 1010  
JA1CYV—H. Yamada ..... 20

### Section C—Receiving

WIA-L2242—D. J. Patterson ..... 3104 pts.  
WIA-L3078—R. H. Young ..... 1109  
WIA-L4028—T. A. Lane ..... 2248  
VK5—Miss J. Martin ..... 12

## INDIVIDUAL SCORES

### Section A

VK3AAU—Ripplebrook ..... 381 pts.  
VK4BZ—M. Gravatt ..... 2824  
4PU—Woombye ..... 1384  
VK5TN—Kings Park ..... 1867  
VK6VV—Geraldton ..... 3150  
6WG—Albany ..... 2114  
6BE—Kalamunda ..... 1735  
ZL3RK—Christchurch ..... 1500

### Section B

VK1VP—Canberra ..... 1068 pts.  
VK2ZCF—Croydon ..... 4393  
2ZLP—Arimdale ..... 2278  
2ZPB—St. Marys ..... 2009  
2ZPE—Turrumulla ..... 1126  
2ZPS—Gonellabah ..... 948  
2ZDA—Miranda ..... 692  
2ZPJ—Wahroonga ..... 563  
2ASI—Inverell ..... 412

2ZBP—Illabo ..... 400  
2BQ—Warrawee ..... 344  
2RK—Bexley North ..... 341  
2ABR—Milperra ..... 163  
2ZPB—Ashfield ..... 74  
VK3NJ—Essendon ..... 1277  
3ZGP—Fawkner ..... 831  
3QV—East Malvern ..... 884  
3ZNB—Anderson ..... 877  
3ABP—Altona ..... 436  
3ZLP—Warrington ..... 333  
3FN—West Preston ..... 129  
3ZNR—Boronia ..... 122  
3ZGL—Keon Park ..... 95  
3AIG— ..... 85  
3ZIA—Check Log .....  
3ZGP—Check Log .....

VK4ZAX—Yerrongpilly ..... 8797  
4ZWB—Pirriuan ..... 3264  
4ZAZ—Rockhampton ..... 2810  
4ZCH—Ipswich ..... 1341  
4ZCS—Indooroopilly ..... 1171  
4ZWL—Cairns ..... 120  
VK5ZDR—Henley Beach ..... 5102  
5ZBR—Gawler East ..... 3488  
5ZHU—Gawler Rail ..... 2427  
5ZEE—Goodwood ..... 1804  
5ZVP—Elizabeth North ..... 634  
5ZCW—Mundulla ..... 474  
5ZAX—Gawler ..... 380  
5ZBC—Mile End ..... 344  
5GG—Check Log .....  
5LZ—Check Log .....

5NW—Check Log .....  
5TM—Check Log .....  
5CL—No mileage shown, disqual.  
5ZSG—No mileage shown, disqual.  
VK6ZAA—Mt. Pleasant ..... 1624 pts.  
6ZDS—South Perth ..... 1395  
6MM—Netherlands ..... 841  
6ZAL—Bunbury ..... 420  
6ZCD—Albany ..... 365  
VK7ZQA—Lenah Valley ..... 1955  
7ZAV—New Norfolk ..... 548  
7ZAC—Hobart ..... 112  
7ZAC—Lenah Valley ..... 110  
7MY—Check Log .....  
VK9AU—Port Moresby ..... 502  
ZL1AKY—Papekura ..... 1010  
JA1CYV—Tokyo ..... 20

## Section C

WIA-L2242—D. J. Patterson, Sydney ..... 3104 pts.  
WIA-L2211—R. C. Abernethy, Sydney ..... 1479  
WIA-L3078—R. H. Young, Brighton ..... 1109  
WIA-L3065—I. D. Thomas, North Clayton ..... 1032  
WIA-L3055—M. R. Cox, West Heidelberg ..... 601  
WIA-L4028—T. A. Lane, Brisbane ..... 2248  
VK5—Miss J. Martin, Wild Horse Plains ..... 12

## Book Review

### RADIO AMATEUR'S HANDBOOK (A.R.E.L.)

The fortieth edition of this long accepted standard manual of Amateur practice closely follows the layout of previous issues. The new style typeface introduced in the previous issue has been retained. If anything, the photographs are even better in this new issue.

As usual, the constructional articles are the best from "QST". New material is mainly on linear amplifiers. There is additional material on 432 Mc. equipment, which, with the release of this band to Australian Amateurs in the near future, will be of special interest to those whose main interest is in the v.h.f. regions.

This reviewer has always found much of interest in the catalogue section, and this edition is again most interesting. One noticeable feature is the tendency towards higher prices for some equipment advertised.

The book contains twenty-five chapters and is well indexed, facilitating rapid location of any matter required, from basic theory upwards.

It is impossible to find words to describe this manual that have not been used before. We can only suggest you have a copy on your bookshelf.

Our copies from McGill's, 103 Elizabeth St., Melbourne, and Technical Book Co. Pty Ltd., 285 Swanston St., Melbourne. Price 5/6 plus 2/6 postage.

## VK9LA—COCOS ISLAND

VK9LA is operated on Cocos Island by Lionel Allen, a radio technician employed by Dept. of Civil Aviation, who now has every reason to believe he is operating one of the world's rarest DX stations. He is the only active licensed Amateur on the island (despite what appears to the contrary from time to time). (VK9RC is also on the island, but at the end of April was inactive.)

The equipment in use at VK9LA consists of an HT37 tx (acquired Dec. 1962), Drake 2A rx, TH4 tri-band beam antenna.

Operation is confined to 14 and 21 Mc.—mostly 14 c.w. and phone. VK9LA averages approx. 10 contacts per day and is active most days. Strange to say, Lionel states that he hears very few VK signals and makes the unusual plea for VK stations to listen for him (from 1200 G.M.T.) and give him a call whenever he. (He would especially like his first QSO with VK1 which he says "would be DX for me.")

VK9LA will be on Cocos until late December 1963, after which he will return to VK6. (The Allen XYL and children are on the island with Lionel—their eldest son is at high school level in his education and studies by correspondence—not so hot says the OM!)

All contacts and s.w.l. reports on his signals are QSL'd 100 per cent. Cards for VK9LA can be sent direct to him at P.O. Box 5, Cocos (Keeling) Islands or via the VK6 (W.I.A.) Bureau.

Amateurs everywhere owe a debt of gratitude to Lionel Allen for his daily efforts to keep Cocos Island on the Amateur Radio map via VK9LA.

—BERT135/WIA-L3042.

## W.I.A. FEDERAL PRESIDENT'S ANNUAL REPORT, 1962-63

It is my privilege to present my report on the activities of the Wireless Institute of Australia in particular, and of the Association of Wireless Clubs, during the last twelve months. This year has been one of re-organisation rather than any special achievement. The Convention in Perth in Easter 1963 produced a new line of thinking—the time is fast approaching when the Constitution should be amended to enable the future growth of the Institute may develop along the lines of the Federation of Clubs and presented to the Convention indicated two ways of achieving our objective—there are two possible methods of proceeding. The first discussed ways and means of handling the problem which has led them to the conclusion that the only way to solve the problem is to discuss the matter legally and in greater detail. This proposal will no doubt receive your attention and approval. However, unfortunately, due to circumstances beyond our control, Councillors did not receive the minutes of the meeting at which this proposal was discussed, consequently your Executive has not completed all action required in the time available. I am sure that your Executive will continue and every endeavour will be made to see that action by all parties is completed between

Touching on administrative matters, the Secretary continues to deal with large volumes of correspondence in his usual efficient manner, but I cannot help but remark that Federal Councillors may see his burden by a more careful study of the Constitution and policy of the League. The Executive Committee has taken up with correspondence and queries, a large proportion of which may be matters dealing with laid-down policy if this administrative burden can be cut down it will leave Executive more time to deal with outstanding directives of the Council and other projects of the League. The presence of the Institute. Your co-operation in this regard would be of great benefit to all concerned.

I am very pleased to announce that the long and constructive work of the Vice-President, Mr. Max Lucif, was rewarded earlier in the year by the bestowal of Life Membership by the American Legion, Inc. Mr. Lucif was well deserved for his long association with the Executive and his terms as the Federal President. His years in this office were trying ones, but he has been a true leader and has been able to have come to expect from him. I also thank him for the support he has given me this year and I hope that he will be more than anxious to be a valuable part of the Executive. I am sure that this opportunity pass without also expressing my thanks to Mr. George Glover, a Past President of the American Legion, Inc. who has continued to support the Executive and provide it with his almost infallible memory for past events and his wisdom gained from long service in legislative affairs.

Membership of the Institute has continued to grow although I feel there is room for a great deal of improvement in this field. It is most important that by the time of the next I.T.U. Conference, which may be only a year or two away, the Institute should be representing the bulk of Australian licensees. At the present this is little more than 50 per cent., a figure which can be improved with concerted efforts by all divisions. A comparison of the membership figures given at the last three Conventions, compared with present figures, are of interest:

I expect that since the inauguration of the High School Radio Club scheme in N.S.W. this year and just starting to make strides in other Divisions, our overall membership will benefit, as well as providing a most useful service to the community at large. Every effort should be made to make this an Australian wide scheme and the Divisions who do not have commenced activities in this sphere should start as soon as possible. I have not yet heard any results of our appeal in "Amateur Radio" for donations to the Divisions of gear for these Clubs, but hope that every Amateur will respond, so that those actively running the scheme will have your support in a practical way.

The Executive have had two major meetings with the P.M.C.'s. Department this year—the first to discuss and modernize the regulations and the second to discuss the proposed amendments to the constitution. The latter was a very pleasant meeting and it was agreed that the amendments should be discussed at the next Convention in relation to the first meeting, the results are already evidenced in that the new addition of the "History of the Book of the Month Club" in most respects, any alterations suggested by the Executive were accepted and included. The proposed amendments will result in improvement over the earlier one. There are still a few contentious points which are still to be tackled, but these will be progressively dealt with at the next meeting. It is a pity that the major meeting, it is too early to say whether our proposals will be accepted, but you may be sure that we will put our case in the strongest possible terms.

During the year we have maintained liaison with the A.R.R.L. the N.Z.A.R.T. and the R.E.G.B. We have negotiated a sale of Handbooks from the R.E.G.B. and Divisions will be able to likely have a better idea of their requirements. They will be available at a cheaper rate than possible through the usual bookellers, and enable many a profit to go into the funds, through the sale of some of our Council we have been able to keep contact with the J.A.R.L., the M.A.R.T.B. and the R.S.G.B. I am sure any correspondence in such matters will lead to at least keep these Societies informed of some of our activities. All members of the Institute will be able to see that the Institute has been accepted as a member society of the I.A.R.U. This membership may well result in a better understanding of affairs behind the scenes, and may lead to the lifting of some of the bans that still

The production of "Amateur Radio" and the "Call Book" has continued under the leadership of the Editor, Mr. Ken Cocking and the standard of both has been maintained. The "Call Book" has continued upward spiral and is now the most complete and up to date than usual this year but this was due to a complete census by the P.M.G. of all licensees. The "Call Book" is a most interesting and useful source in Australia and the Territories. There will always be some mistakes but a note to the Editor is the correct way of pointing out individual concerned will put pen to paper. The Publications Committee are to be congratulated for their efficient and correct handling of the "Amateur Radio" and the "Call Book". The Editor and some of his Committee have attended some of the meetings of the Victorian Amateur Radio Club and this has resulted in a better understanding of the others problems. I am sure that the Victorian Councillor will have a more detailed report to the next AGM.

relation to the financial state of both publications.

The Federal station of the Institute, VKKWA, has received some attention during the year and has been installed in such a way that official broadcasts may soon be possible. I must thank Mr Harry Kinnear, a Past Vice-President, who generously donated a Hallicrafters receiver for Federal use. Plans are now being made for an operating schedule for VKKWA so that the Divisions and individual members may become themselves informed on matters of Federal nature.

During the year, Mr. Tom Stroughair who has been responsible for all work connected with the production of new certificates for various purposes, was appointed as the Contest Co-ordinator. His task has been to ensure that all certificates owing and outstanding to local and overseas Amateurs from W.L.A. Contests have been issued, and I am happy to report that the task is completed. He will retain this job and I am sure there will not be any complaints in the future about competitors in the contest. The time taken for the publication of the results

As proposed, the subject of the NZAZT is the NZAZT because the time limit extended to include this year's VK/ZL Contest to include all of Oceania. This matter was discussed at the last Convention, but a decision had not been reached by Council so that the NZAZT did not arise or until after the rules had been established. It is not yet certain whether the change of rules was a success or not. The conduct of Contest affairs has this year been taken over by the Queensland Division for a period of three years, and I am sure the success of the service will be a great success, having in the past

The issue of awards by Mr. Klasek have been dealt with in his usual prompt way and judging by the number signed this year, there has been no falling off in applicants. The QSL Officer, Mr Ray Jones, has carried out his job with expedition and economy. His task has been made a bit easier by arranging a special QSL post office box nearer his home—this has also meant a bit more room in Box 3611W.

During the year, the Institute was invited by the P.M.C. to nominate a representative to sit on the Space Communications Committee of the U.N. The Institute has been in contact with in relation to other users of the frequency bands. Mr. Arthur Tinker represented the Institute at the Committee's first meeting. It has been held to discuss the various problems. This is a preparatory committee to the U.N. Conference on Space and Communications at an international meeting to be held in Geneva later this year. It is probable that the Institute will be asked to nominate an official representative from Australia representing overseas, and it is this committee which will determine his brief. It has very confidentially been suggested that the Institute's representative, Mr. Tinker, will have very confidentially represent the Institute's interests which he has amply demonstrated in the past on the

Arising out of the last Convention, it was decided that a sub-committee consisting of a member of Executive and the VKI and VKI Federal Councillors should visit the Canberra Radio Society to discuss the formation of a Division. Advice was received from the Society that they did not wish to pursue this idea at the present time, so it was not

(Continued next page)

Continued next page)

	1987	1988	1989	1990
	M. L.	M. L.	M. L.	M. L.
VK2	785 1168	1097 1840	1343 1377	1363 1427
VK3	728 1088	748 1211	738 1242	798 1382
VK4	135 383	200 410	388 449	388 608
VK5	389 387	444 464	472 530	541 545
VK6	113 217	181 241	187 287	216 317
VK7	181 132	148 130	174 156	174 164
VK8	25 62	34 78		
Tot.	3336 3407	3007 3072	3110 3141	3254 3374

The membership figures above cover all grades of membership and not just licensed members, so that it can readily be seen that we must do something in the way of membership drives if we are to increase our membership. The means of doing this is a policy matter, and it is for the members to decide whether it is in their own interests. It should be noted that the technician licensees have continued to follow the trend growth indicated at the last Convention and they still out-number the A.O.C.F. holders in the revenue account. It is the members' effort to pursue the policy of encouraging them to take a full license.

WIRELESS INSTITUTE OF AMERICA	
Balance Sheet as of	
Current Liabilities--	
Accounts payable	\$ 23 11 1
Convention Fund	4 19 4
Trust Fund	268 0 8
I.T.U. Fund	436 10 8

Accumulated Funds—	
Balance, 1/3/03	£870 18 1
Less excess of Expenditure over Income for year	9 3
	<u>870 8 10</u>

£ 1548 10 7

AUSTRALIA--FEDERAL EXECUTIVE	
19th February, 1963	
Current Assets--	
Cash on hand	£21 0 0
Commonwealth Savings	
Bank	1957 17 11
Accounts receivable	4 0 0

Fixed Assets (at cost, less depreciation)—		
Furniture and Fittings	£15	9 10
Typewriter (No. 1)	12	5 0
Typewriter (No. 2)	19	12 0
Duplicator	117	9 0
Trophies	26	18 0
Equipment, VIKSWIA	78	0 0

2013 10 10	2013 10 10
2013 10 10	2013 10 10

# YOUTH RADIO CLUBS

## W.I.A. PRESIDENT'S REPORT

(Continued from page 14)

What a wonderful story to hand this month from Port Pirie! NER 1T9 just a geographical coincidence it happens to be in VK3. A letter comes from Bert SQR, President of Port Pirie Amateur Radio Club. "Following the re-formation of our club towards the end of 1962, a public meeting was held to estimate the degree of interest in the town in the formation of a Y.R.C. The local newspaper provided publicity in advance and the headmaster of the high school gave the scheme plenty of promotion within the school. The final result was the formation of a Y.R.C. with no restriction (or age) on membership. Prior to the first meeting, on March 8, the headmasters of all the schools were approached and supplied with details of the Y.R.C. scheme. In every case we received the active support of these people. Local press also came to our help with quite an extensive coverage, and as a result we enrolled 58 members at our first meeting later increased to 62.

"A major difficulty at this stage was the provision of suitable accommodation, since the P.P. Amateur Radio Club itself had no regular meeting place. However, an appeal to the City Council for assistance was successful and we were granted the use of the radio room at the local airport. This airport was formerly a R.A.A.F. station but now carries no radio equipment. This room has been made available to us for £1 per year. Appeals in the local papers and over one of the local radio stations brought some tables and chairs, and a supply of old radios for wrecking.

"At present, meetings are held once a fortnight, since the P.P.A.R.C. only has about a dozen members and due to business and other reasons, not all of these can devote regular time to these classes. Each session is split into sections to hold the interest of younger members. A short lecture on basic theory is followed by a Morse lesson, and then the remainder of the evening is devoted to practical projects.

In addition, Bert sends me a circular issued to parents. This has many sensible points—non-profit operation, free issue of parts but a register kept, privileges for members making best progress, small membership fee, regular statement on financial strict supervision and safety measures, parents invited to visit, etc. This is a fine story with a moral for all similar centres. Heartiest congratulations to the members of P.P.A.R.C. the City Council, the schools, and all concerned! The moral? Amongst others, please note one special one—if you can't manage a Y.R.C. yourself, form a group.

Further good news from VK6 and VK6B. VK6SPH has accepted the job of Y.R.C. Co-ordinator in W.A. and State. ASA has been appointed in Queensland. Congratulations on your fine spirit, fellows, and I hope your Division backs you up as well as appointing

you. Awkward question—if you count 1, 2, 3, 4, 5, what number is missing?

Happy news from VK3 is very encouraging. 19 Y.R.C. clubs registered! Sorry to hear that the VK3 Co-ordinator, Ken 2TL, has not been in good health, but that should cheer you up, Ken. Ken has had a very encouraging letter from the Victorian Education Department. Which State is going to be first to have Summer Schools on Y.R.C. for Science Teachers? An SOS. Brother Colin at St. Francis' College at Lenton hopes to develop a transmitting type club at his College, without a boarding school. Any Amateurs in the area who can help are asked to contact Brother Colin.

Further reference to Scouts. Negotiations are in hand with the N.S.W. Branch of the Boy Scouts' Association to develop a scheme whereby Scouts who gain W.I.A. Certificates are to be entitled to Scout Proficiency Badges, e.g. Elementary Certificate of the Y.R.C. scheme might be a qualification for Wireman's Badge, Intermediate Certificate might entitle a Senior Scout to a Radio Mechanic's Badge. What about pushing this scheme in your State?

Club leaders please note, Doug Williamson, of Beas Hill High School (Sydney) is in charge of Elementary Certificate training and testing. Keith 2AKC, of Booragui High School, Booragui, N.S.W., took over Junior level testing; and Ralph 2ZRS, of Hornsbusch High School, Sydney, is the man for Intermediate.

Another SOS to Broken Hill: Frank 2ACQ visited Broken Hill and contacted local Scout authorities. Mr. Bert Borg of local station 2NB, has agreed to assist in formation of a Scout Radio Club. Can Amateurs and Associates in Broken Hill do the right thing with help, instruction, and administration? Is Port Pirie to tan the hide of Broken Hill?

Random jottings (most VK2 against but I'm hoping for a better spread soon): First Auburn Senior Scout Radio Club should be on the air before long. Jim 1AMG is instructor and has donated a s.w. set. Rex 2VA has made available a tx to this, his old troop—Rex says 1967, if you inquisitive types want to know! But more help is still needed from many Amateurs in Auburn. Mr. McKewell, of Ravensby, has donated a quantity of gear including two inductors, amplifiers which are to become Morse practice oscillators at the hands of Joe 2JH. Can anybody else help with construction (just a hint). I'm snowed under, myself, and would appreciate it.

Final note from VK1LS at Lynnhem High. The s.b. phasing tx of George 1GB, of our school club, is still new from the two contacts. One was with 2 watts of good s.b. and the other with a problematical 80 watts. Further alignment proceeds, but George is happy.

Our monthly message again. If you can't manage a Y.R.C. alone, form a group. 73, Ken 1K3M

necessary for the sub-committee to travel to Canberra. However, look for the opportunity during a business visit to meet the members of the Society and discuss any problems with them. It was evident from the discussions which followed that it was not possible at present to form a Division. However, many other matters of interest to the Society were discussed and the author and the Secretary, that my visit was well worth while. I hope, during the next twelve months to be able to meet and discuss other matters and discuss any of their problems in person.

Mr. Dave Rankin has continued to deal with the activities of the v.h.f. bands, and since the publication of his article in "Amateur Radio," has received a further influx of applications for v.h.f. records which are now being checked. Openings in the two lowest v.h.f. bands appear to have been more consistent this year and activity is on the increase. Many good contacts have been made with overseas stations and the increase in operation leads one to suppose that these bands will soon become as popular as the higher VHF bands.

Regarding the financial state of the Executive, I refer you to the Balance Sheet for the year 1966. The Executive has a surplus. The expenses for the operation of the Q&R, Bureau have doubled due to the increase in paper and the re-printing of the Remembrance Day Certificate. There is a slight deficit for the year. As there are still several other certificates to be printed in the year, the cost of printing these is likely to be much higher unless additional income is forthcoming. I particularly wish to state that the Executive has a strong feeling, although no doubt this will be referred to during the year, but despite the foregoing, our actions for the year still reveal a healthy state of the finances.

This year Executive was composed of some member plus the advent of two new members, Mr. J. S. Macmillan and Mr. Ian Macmillan, both of whom have now settled into the Executive sphere and are assisting in the work and deliberations. I trust they will continue to supplement the experience and experience of the older members, as well as injecting new opinions into the discussions. The work of the Executive for the year 1967 was 13 meetings and the attendances were as follows: W. Mitchell 13, M. Hull 13, J. Lamshead 12, D. J. Glover 12, J. S. Macmillan 8, I. S. Macmillan 8, G. Glover 13 (co-opted), T. Siraighair 7 (co-opted), B. Boase 5.

It is only fair to say that Mr. Tinkler has been away interstate and overseas for a considerable part of the year and has been unable to attend many of the meetings. I thank all Federal Councillors of the past year, some of whom have not been re-elected, for their support and attendance to Federal matters on behalf of their Divisions. I do feel that Divisions would be wise to give urgent consideration to the appointment or re-election of Federal Councillors for the period greater than twelve months. It is very difficult for a new Councillor to pick up his duties and become acquainted with the affairs of the Division twelve months before a new man is appointed. To all officers not mentioned by name, I express my thanks for the work they have done. I hope they will all continue to serve the Institute in the future as sincerely as they have done in the past. This year has not produced anything startling in the way of proposals or concessions, but it has been a year of organisation, of re-building for the future. I trust the foundations laid this year in the various Amateur fields will lead to a constructive year ahead for those now charged with continuing the Institute's administration through the Institute. My own efforts will not be spared to promote the growth of the fine edifice we eventually hope to erect.

W. T. S. Mitchell, Federal President.

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ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

## H.E.

I hope you will excuse the patchy effort in preparing these notes for the first few months, transitional difficulties will soon be overcome and you will settle down once again. Please keep the notes coming in each month and remember these notes are the only source we have of recording our own v.h.f. efforts. I would appreciate any suggestions or ideas anyone has for improving this page and I would particularly welcome letters from listeners in each State. This page can provide a worthwhile contribution to our own efforts.

How many have heard the excellent tape of Ed Tilton, WARDQ, on v.h.f.? I believe there are several copies around so you might have heard it. If anyone would like a copy drop me a line and I will let you know how you can obtain a copy.

On this subject I feel sure that a similar effort could be made on examples of v.h.f. DX here in VK. There are many papers of DX around us. Amateurs so I am appealing to those who have any for their assistance in this project. If you have any recordings of DX on 2, 3 or 4 mhz, would be prepared to loan some or arrange for copies to be made, I would like to hear from you. Please write to the Sub Editor, I will let you know what you have and I will let you know what we have in mind. Hope to hear from you soon, T3, ZGCP.

## NEW SOUTH WALES

At the annual meeting of the V.H.F. Group last month, the new committee was elected, comprising a fair sprinkling of old salts, the list running as follows: Bob 20A, Chairman, Dave 24WZ, Secretary/Treasurer, and John 24VC, Vice-Chairman, followed by John 22AV, Paul 22PN and Terry 22BL. Official duties were delegated on the following Monday night. At the first committee meeting held at Bob's home, the meeting concluding with a sumptuous stomach stretching supper served by Bob's YF, Paul and John. From the new committee, Horrie is country liaison officer, Dave has enough to worry about, Bob is liaison officer to Council and young men, and I am of notes and technical officer (I think that means I make the cups of tea!).

A long distance fox hunt will be held on 16th June, to be started by Bob 24SE, and in July, the all-v.h.f. band scramble, will be held on 13th and 14th of November. So keep close.

A series of excellent lectures are on the way, that on 3rd May was a beauty from John 22AV, generating an Amateur t.v. signal. This will be followed in the months to come with a series on mobile equipment, how, why, and etc.

Six metre a.s.b. is still being knocked into shape with pretty consistent activity from Keith 22VL, Roger 22RH and Terry 22BL—all running five rigs and powers up to 200 watts p.e.p. Any operators needing a hand with circuits or cut up QSOs are invited to contact any of the above. David 22VF is reported to have a.s.b. operating on 28 Mc. using a McCoy filter, all ready to heterodyne to 3 mhz.

Dick 22CP and Bill 22AC are running regular 200 watt QSOs on 148 Mc. and Dick says the big break through came by using a passive reflector on top of the mast at Bill's end and using a 100 watt 200 Mc. antenna at the ground level, cutting out a lot of loss on coax. The 148 Mc. net is gaining a lot of recruits and the frequency is being fixed to 146.0 Mc. which fits into line with VK3 on their second channel, and now that two 50w output base stations are just about ready to go on air, the net is expected to be very active. The QTH of Lindsay 20N, at Gosford, we should hear a lot of activity from up there. Incidentally, Lindsay 20N is a 200 watt station, and off to the States in a couple of weeks and if there are any KVM2s going at the right price, he may bring one back. So be watchful. Also 23Z and Doug YZ. By the way, how is that 23Z tv. rig coming, Sandy? T3, Z2BL.

## SOUTH AUSTRALIA

On Mc. One opening only of any note in April. This was on 17th, when VK4s were worked by most of the locals. One of the more interesting facets of this opening was the news that Dave 42AX is considering modifying some of his tx parameters. Also of interest was the rumor that during the opening, Dave 42AX went to a JA. However, whilst the Korean 2m station, HLKA, was heard by 52BR and others, no JAs were worked in Adelaide.

Mobile activity is high in VK3. New chunks include Bar 65Z and Bob 52DX. This last mentioned putting out a terrific signal. Doug 88K/S has been mobile recently as has your conductor (35w. to 813).

144 Mc. This band has been less active recently. David 5AW and Mick 52DR seem to be on only infrequently and information from overseas on Oscar 3 seems scant.

An a.s.b. walk-in of great note, Sheep 5DC, has been heard on 2 mhz recently flying up a Gossel Communicator and Rod 52AA has his new QGQ52/60 tx on 2 mhz and this is working quite nicely.

General News: Doug 83K, our V.h.f. Group President, has returned to Adelaide and will take over the weekly broadcast from Brian 52BR, who has been doing it for the past three months.

On 7th a fox hunt was held in Adelaide. Alf 5LA was fox and bounds included 52BR, 52GF, 52DG and your conductor. The weather was well we could ask, i.e. raining cats and dogs all the evening, and three interesting hunts were had. Alf 5LA had some quite good locations picked out.



Garry Herden, VK5XK, with his portable station at Goolwa, South Australia. Garry was very active at Xmas time on all bands, including 6 and 2 metres, and runs a power input of at least 100 watts on 6 and 2 metres. His antennae are a 4 element yagi on 6 mhz and a 5 element yagi on 2 mhz. Garry operates regularly from this QTH at various holiday periods and last Xmas made some fine contacts on 2 metres to VK4.

There will soon lose the 288 Mc. band, as has been decided a little interest, shown recently in 400 Mc. Barry 5BQ and Cor 52KC have a joint programme in hand, one aspect of which involves the description of a 500 Mc. s.d.c. in "A.R." This article will be awaited with interest.

Alf 5LA has a 6/40 tripler on the way, as does Col 67A (although he may not realise it yet). Your conductor has built a 16 db. yagi and has the 4170 through line converter well in hand. It will be fun to see how many of these chaps can contain themselves until January 1964.

Mick 52DR has a 2 mhz mobile on the way 52EY/T and 5AOT/T communicate regularly on 885 Mc. With a signal of high quality (in one case) intercarrier sound. Roy 32OM/3 has been working the locals on 50 Mc. whilst holidaying in our fair State. T3, ZGCR.

## WESTERN AUSTRALIA

This year April has been a month of good mobile weather. Many of the Group has taken advantage of it get out and go. Most week-ends at least three or four mobiles were heard from near and far. With Easter, and Anzac Day, being close, it has made for four days of activity, some of the Group have toured the QTHs of country Amateurs, strengthening, encouraging and kindling interest in v.h.f. activities. David 62Y and Ken 62Z were out to the South West over Easter and a group led by Doug 62DW went north to Carnarvon over the Anzac Day week-end. Les 5LP at Carnar-

von and the Geraldton boys, who are spurred on by Brian 5VV, were the targets the mobiles were had in view.

Get the subject of mobiles, the local tv. channel 7 is well represented by its staff. Kevin 62CB, Phil 62AW and Bert 52DF can be heard regularly working each other and home based Perth stations, on their way to and from duty at the b'a. Bob 62CY is the latest addition to this gang. Cedric 62CD (ex 52BC) is the only v.h.f. mobile known of working at channel 7 studios. Mac 62MH had some of his mobile equipment at the last meeting. He has a very neat combination, tx mod, and power supply built into a unit approx. 13 x 8 x 6 inches. It only needs 12 volts, a make and an aerial plugged into it. His 80 Mc. converter has been had better get a couple of padlocks as almost all of us would like that gear in our cars.

The April meeting was well attended and enjoyed by all. Roy 52R reported on the fox hunt run by Tony 62DT with Doug 62DW and Ken 62BT on a time basis. Barry 62CF and Mac 62BK are cooking up the scheme for the next month. The v.h.f. group gave an informative lecture on radiation and its detection and answered the barrage of questions fired at him by the members.

The local beacons have been shifted to a location where they will have the maximum operating time. Bill 62KX and his XYL (52VL) have permitted them to be installed in the QTH. Trial runs have indicated a good coverage by both 50 and 144 Mc. beacons. In consideration of the service to the Group, and Alaine, who although not attached to the Group, but in the interest of Amateur Radio as a whole, it was decided unanimously to elect them honorary members to the V.H.F. Group. A 400 Mc. beacon is being planned in readiness of our allocation for next year. It will be a 200 Mc. beacon and have a QGQ53/3 tripler as the final.

With the advent of channel 8 in the East and the shift to 53-54 Mc. eminent, don't forget to get that gear ready for the new frequencies. With winter almost upon us now is the time to get those beams, converters, and be peaked up as when the DX comes again it will be too late. T3, Alyn.

## PAPUA

On Mc. April was a disappointing month in VK3. This was the month April since 1963 in which no JAs were worked, or even heard, from Port Moresby. K3HA, which have also been either mobile or heard during April. Over the last few years, were also absent on one day, 27th, was a weak carrier heard bearing S.E.N.E. on 50.12 Mc. intermittently from 2220-2345 hrs. 2-3 A.S. This may have been back scatter from VK or possibly coming in on the S.N.E. beam heading 48° E. Ionospheric conditions were not good. Pacific Islands network were heard on 16 nights during the month at strength ranging up to well over S9.

The main news of the month concerns skeds maintained by 52AV since April since 1963 in Guinea, at 1900 hrs. each night. BAS (Jm) on 50.34 Mc. was heard on six occasions and contact made on two nights. Maximum signals were 34 and the propagation over the 50-mhz path was by ionospheric scatter. Tests are continuing each night at the same time.

Interesting mobile tests were conducted by 52ZV up to 200 Mc. 400 S.B. Wewak, being received up to approx. 20 miles over mountainous paths. 52ZV/M runs 30w. to a half wave vertical on his VW add-on.

144 Mc. 52ZV and 5AU were again active on this band with 52ZV operating mobile. Tests here have only been made over a path of about 20 miles. 52ZV was heard in Port Moresby at a later date. Skeds with 4KT in Townsville have resumed but nothing heard to date. 52ZV and 5AU were again in Port Moresby during the month. T3, Allyn.

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Recently one of our members was awarded the NZART award for having confirmed all 2L districts on 50 Mc. What we would now like to know, is the VK award on 80 Mc. available to members of the S.W.L. Groups on proof of having confirmations from all VK call areas? So if Federal Executive could inform us we would greatly appreciate it very much. We now have a good percentage of S.W.L.s who listen on v.h.f. and if the awards are made available to us it will certainly stimulate us to our hobby and at the same time encourage more listeners to our v.h.f. bands.

### VICTORIAN S.W.L. CONVENTION

This is an exclusive report on the 1963 Victorian S.W.L. Convention held during April at Ballarat. We were disappointed that no country members turned up at the Convention this year. The first mishap of the Convention was the notorious Vic Morris which struggled to Ballarat with a petrol pump that refused to pump. What member got involved with a YL and vanished all evening? This lad was deemed that late by the YL that he found the hotel locked up for the night when he arrived back early next morning. The fellows saw everything that opens and anything goes station when they inspected BTVE and heard some of the amusing situations that can arise in a v.t. studio.

It appeared as simple the way Ron ZBER dragged in 4 Mc. stations from Melbourne and Mt Gambler. There was a stunned silence of amusement when the boys saw the layout of the V.H.F. receiving station. At 30 mhz DX when the signals are received on a variety of aerials designed for that band and other bands by pressing one button. We thank the two leading Amateurs of the city of culture—SHW and ZBER—for their hospitality to the S.W.L.s during the Ballarat Convention. All sorts of offers of champagne could be sent to 13006, your Convention reporter.

It is very pleasing to see so many of our members have obtained their tickets recently. Most amateur groups from being S.W.L. This no doubt is the reason that we are always seeing new faces in the Group, with only a few of the old regulars remaining within the Group.

We would be very pleased to receive any photographs that some of you may have taken of your shack or antenna. Any money used in A.E. will be returned to you. So how about it? See what you can dig up.

Maurie L308 is really giving the DX Ladder a shake at present. So beware you fellows at the top of the ladder. Recently he received a QSL for a report that he sent off 24 years ago. So it just goes to show that you should not give up hope too soon for that QSL.

On Friday, 2nd May, a number of us were at the Moorabbin and District Radio Club's get-together. We would like to thank them for inviting us for the evening.

Craig Cook, our publicity officer for the Sunday broadcasts, would like members who send in band reports to him to state the following in their reports: time band, mode. This will assist him very much indeed if you will all do this. Thank you.

Now that we have more members with v.h.f. gear available, what do you say if we form a regular v.h.f. monitoring service? We will give you your ideas on the subject as soon as you can.

We were given to understand that the V.H.F. Group would be willing to construct converters for the S.W.L. Group. Does this offer still stand? We have at least one member interested in 1994 Mc. Are there any other starters for this band? Keep in mind that next year we will be getting 429 Mc.

Jan L3085 comes forth with an interesting story of his activities. Jan has not been away of late as he has just recently taken up residence at Colac and he does not have his rx with him at present. Was very pleased to hear from you, Ian. Hope you can get your rx going at the new QTH. How do you like living in the bush these days?

Greg L3138 has been very active on the bands and has been receiving a few QSLs. At the moment he is getting ready to erect a beam. Bet you jump ahead once you get the beam working. Greg.

### NEW SOUTH WALES

Don L3222 has been very busy of late, however he has managed an occasional peep at the bands. Over the Easter period Don soared some nice DX. JICCA on Galapagos and PJ5CG from Caroussel Island. Don would like to know of more details of FO8AA and KC4AAC. At the moment Don is thinking that unless he can put a beam up, he will be missing out on much of the DX. Yes, I think you have a point there Don.

Back in 1958 he used to use a t.r.f. rx and used to hear all the DX about the place. Conditions are certainly a far cry from those days Don. And it looks as though it will be several years yet before the sunspot cycle starts its upward trend again.

Chas L3211 has been rather busy of late, however your scribbles seem to contact him via the 800-ohm line when in Sydney recently. At the moment Chas is busy modifying his t.v. set. Latest QSLs that Chas has received are from LUGY, VL18, ZETFR, YUSYU, JA1 and several 50 Mc. cards.

### QUEENSLAND

Our good friend Afion L2136/VK4 comes forth with another very interesting letter. At the moment Afion is nursing a badly injured foot which was the result of a motor boat accident on the Tinaroo Dam near Alberton. Very sorry to hear of your mishap Afion and hope that you will be up and about again before long.

Afion has been doing a lot of listening on 7 Mc. recently and has been hearing some nice DX on a.s.b. His only QSL for some time was from HPEFL. Afion is thinking of disposing of his HQ170 in the near future. Best of luck Afion and I will tell the boys about that little matter.

The recent heavy rains in North Queensland have prevented him from moving around much. Thanks for your letter Afion, and maybe I will see you within about 10 months.

### SOUTH AUSTRALIA

Darrell L5041 has been very active on 14 Mc. a.s.b. recently, but is complaining about only getting 11 QSLs from 100 reports sent out this year. Well Darrell, you are not alone in that regard, we all have that trouble. He now has an AR88 rx going and he soon hopes to have converters going for 50, 144 and 288 Mc. bands. That is good news old boy, it is high time that we had a few more S.W.L.s on the v.h.f. bands. Latest QSLs received by Darrell are from WCLT and K8QKQ.

### WESTERN AUSTRALIA

Peter L6021 has as usual been keeping VK3 on the map in the S.W.L. department. Peter has been on 14 Mc. a fair bit of late, for a change. But he has been watching all the bands to find out what the We are coming in very well on 7 Mc. in the morning. At the moment he has his fingers crossed as he may be getting a new rx soon. Peter writes to a number of novice stations in the States and this keeps him very busy with the pen. Thanks also Peter for the photo.

Now come on you VK3 boys, don't leave all the pen-pushing to Pete, we want to hear from you.

T3, Mac Hilliard.

### DX LADDER

Countries	Zns	S.b.	W.
Cont. Hrd.	Cont. Hrd.	Cont. Hrd.	Stat.
E Treblecreek	277	285	40
D. Grantley	115	259	38
A. Westcott	87	159	31
M Hillard	33	18	152
M Cox	79	232	89
P Drew	32	187	36
N Abernethy	47	96	11
N Harrison	45	105	27
I Thomas	41	128	30
D Coggin	16	86	7
D. East	6	90	5

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## FEDERAL

### P.R. MEETING

Present at meeting held on 8th May, 1963, were: TUM, ZS, JHL, ZQV, JAG, SNL, ZCH, ZZY, and ZLZ.

#### Correspondence from—

1. P.M.G. details of A.A. Committees for 1963.
2. Jec Trem, re vote of thanks to members animating with re-establishment of VKCWA.
3. Max Black, re Y.R.C. and other matters.
4. Rex Black, re copy of letter to VK3 Fed. Councillor re Y.R.C.
5. Pub. Com. re forward for Call Book.
6. Awards Manager, N.Z.A.B.T.; comment on 1963 VK/ZL.
7. VK3DU to contact with overseas societies.
8. E. Ferguson, re R.T.T.Y. frequencies.
9. Scouts World Bureau, re 1963 Jamboree of the Air.
10. Membership return and circulation list, VKT. Bulletin: Feb. I.Q.Y., Jan. I.C.D.O., Apr. VK4, Apr. VK6, May VK7.

**Business arising:** 1) Resolved that details and acknowledgment be submitted in "A.R." (5) Aspects of the production of the Call Book were discussed. (6) Resolved that samples of certificates and badges be made available to Mr. Bowse. (7) Other matters were set aside for routine action by the Secretary.

**Treasurer's Report:** The report was received, but adoption deferred pending clarification of certain points. The Treasurer having had to leave before the report was presented.

**Convention Report.** In a brief resume, TUM stated that three major matters emerged in the conduct of the Convention, upon which progress was made. These were:

1. A sound basis for a new Federal Constitution. A total of nine basic points were discussed. In the event of the subject of motions, it being decided that a Federal Company seemed to be the best basis to work on.
2. A sound basis for the Youth Radio Clubs scheme was achieved, and much detail discussed.
3. I.T.U. representation—a basis of financing, involving individual Divisions, and other details, a target sum of £3,500 being suggested.

**General Business:** The main business was the election of office-bearers for 1963-4. Results were as follows: President, Major W. S. Mitchell, VK3UW; Vice-President, Mr. G. M. Hall, VK3ZL; Secretary, Mr. R. Boase, VK3JN; Secretary, Mr. J. Lancaster, VK3JL; Secretary, Mr. A. Seadman, VK3JLT; Activities Manager, Mr. D. Rankin, VK3JQ; Communications Manager, Mr. I. Macmillan, VK3CS.

Co-opted members were appointed as follows: Honorary, Mr. G. Glover, VK3AG, Government Liaison, Mr. A. Tinkler, VK3ZV, Co-ordination Manager, Mr. T. Stroughair, VK3JAY; Fed. Awards Manager, Mr. A. Kinsell, VK3JES; Fed. QSL Manager, Mr. R. Jones, VK3JRT; Fed. Y.R.C. Co-ordinator, Mr. R. Black, VK3JED; Fed. Contest Committee, Queensland Division. Other matters discussed included a modification to the W.A.V.K.A. award, effective Jan. 1964, and another matter involving a service to members.

### INFORMATION OF INTEREST FROM F.E.

An informal meeting was recently held with the P.M.G. Department to discuss various matters including c.w. for Z calls, v.h.f. beacons, delays in licence issuance, Amateur Advisory Committee, v.t.v. publication of Handbooks for A.R.O. as part of Call Book, suffixes for different islands, etc. Under VK3-VK6, reciprocal licensing, 88 Mc. for Z calls, 100 Mc. limit for A.O.C. re-examinations for A.O.C.P. Details and results will be available when the exchanges are formalised.

### HERE AND THERE

The sixth Jamboree of the Air will take place on 19th and 20th October between 0601 hours G.M.T. 19th October, to 2558 hrs G.M.T. 20th October. More details will be published at a later date.

Members are reminded that any "Federal Gripe" can receive attention via your Federal Councillor, or if you have not written to the Secretary, C/o. Box 2611W, G.P.O., Melbourne.

Do you understand the organization of the W.I.A.? We are going to print an article on this subject, for those who are interested.

VK3WIA is back in business, and it is hoped that regular schedules of operation will soon be established.

### VOTE OF THANKS

Federal Executive wishes to thank the following for their generous assistance in the re-establishment of VK3WIA.

Doug VK3DU for a modulation transformer and much hard work; Ken 3CW for an 813, Max ZS, for a mast and hard work, and to Arthur Tinkler for the gift of a mast. Most particularly, F.E. wishes to thank Mr. Harry Kinnear for his most generous gift of a Hammarlund receiver, in respect of which it has been resolved to affix a suitably inscribed plate to the unit, acknowledging the gift.

### AMATEUR ADVISORY COMMITTEES

The following are the details of Amateur Advisory Committees forwarded by the P.M.G. Department—

New South Wales: W. L. Woolnough, VK3GL; L. E. Taylor, VK3CH; N. Macdonough, VK3ZG; G. G. Hall, VK3AGB; B. H. Anderson, VK3KAD; Dr. L. McMahon, VK3KAC.

Victoria: R. A. C. Anderson, VK3WY, P. P. O'Dwyer, VK3KQ, M. L. Storck, VK3ZSO; R. J. Richardson, VK3ZP.

Queensland: K. D. M. Grice, VK3DG; C. E. Cogwell, VK3CF; P. H. Brown, VK3PJ; S. R. Baxter, VK3AF; C. I. Patterson, VK3YP; R. A. Collins, VK3KX.

South Australia: J. C. Haseldine, VK3KJ; R. G. Roper, VK3SP; W. D. Randall, VK3SV; H. K. Stacey, VK3XLA; W. D. Verrall, VK3WV; E. R. Brown, VK3ZL.

Western Australia: R. Chamberlain, VK3RY; J. E. Rumble, VK3RU; H. J. McDonald, VK3MN; V. Kinney, VK3VW; A. Parkes, VK3MO; P. Hayward, VK3AF.

Tasmania: W. M. M. Mabel, VK3TN; I. Nicholas, VK3TZ; P. Griener, VK3TO; C. Spisler, VK3KS; E. Beard, VK3EB, T. Allen, VK3AL.

## FEDERAL AWARDS

### W.A.V.E.A. AWARD

It has been decided that as from 1/1/64, VK1 will count as a separate call area, from which one QSL will be required. Three QSLs will still be required from VK2 as previously. A complete reprint of the amended rules will be published at an early date.

### B.I.C.C.

The following amendments are applicable to the Countries List published in "A.R." January 1963—

AP2—Pakistan should be AP—East Pakistan. ET2—Ethiopia. As from 15/1/63 Ethiopia is deleted as a separate listing and thereafter is combined with Ethiopia.

FK1—Joan de Nova, situated in the Mozambique Channel, is a new and separate listing.

FK3—Glorioso Is., situated north of Malagasy Republic, is a new and separate listing. GC—Channel Is. The single listing of these islands in "A.R." under Jersey Is. as one listing, and Guernsey Is. and Dependencies (Alderney, Brechou, Great Sark, Little Sark, Herm, Jethou and Lihou) as a separate listing. Credits already given for Channel Is. will be transferred to the appropriate new listing.

## SILENT KEY

It is with deep regret that we record the passing of—

VK2FZ (ex VK0FZ)—F. M.

Stein.

VK7FJ—Ted Evans.

Z20, FK1-3, 4, 5, 8. As from 1/5/63 the five separate listings of Beth New Guinea, Java, Sumatra, Neth. Borneo and Celebes and Moluccas will be deleted.

PK—Indonesia As from 1/5/63 this new listing will embrace the entire territory of Indonesia.

ZQ—Uganda. New prefix is 5X3. ZD1—Sierra Leone. New prefix is 8L1. ZM8—Samoa. New prefix is 8W1.

### V.H.F. AWARDS

V.h.f. awards have recently been issued as follows—

V.H.F.P.C.s: No. 1—Jim Forso, VK3JHF, 50 Mc. No. 24—Len Poynter, VK3ZGP, 50 Mc.

W.A.S. 80 Mc.: No. 38—David Rankin, VK3JQV. No. 46—Peter Milne, VK3ZGP.

No. 41—David Sidley, VK3ME.

A. Kinsell, VK3KS, Awards Officer.

## NEW SOUTH WALES

The general monthly meeting was held on Friday, 28th April, at Wireless Institute Centre, Crows Nest. The attendance was good and general business was kept to a minimum to enable the guest speaker, Mr. Joe Reed, VK3JR, to deliver a most interesting and possibly somewhat controversial lecture on the advantages of vertically-polarised antenna systems.

To help emphasise the startling facts surrounding the angle of radiation aspect of propagation for vertically-polarised waves, carefully prepared slides. He touched on the subject of the merits of loading various types of radiators, with emphasis on positioning of loads on the antenna. This most interesting lecture, as expected, developed into a general discussion, there being quite a number of very able and experienced amateurs in the audience.

Well, Easter has come and gone, and with it the much-awaited Federal Convention. This most important of Federal get-togethers was conducted in Sydney in a very smooth and generally congenial atmosphere. Our only regret was that sufficient time was not available to show our guests more of the highlights of Sydney and surrounding areas.

Coinciding with the Federal Convention, the very popular Urrung Convention was held on the north coast. Harold 2AAH and Max 3MP represented Council at this gathering, and from their remarks they certainly enjoyed themselves, both on the official as well as the social side. As usual, a thoroughly commendable and enjoyable holiday week-end at Urrung.

With bad flooding taking place on the north coast as these notes are compiled, I may have some news next month of activities by Army units in these areas. Having been working ZKO/P at South West Rocks (near Kempsey) during the last few days, it appears that he is not altogether suffering from sunburn, news from him was that he had been completely washed out of his tent, and was operating a water-buffet in the emergency quarters on the reserve. 75, 25W.

### HUNTER BRANCH

The May meeting of the Branch, held in the University College, was again very well attended, there being thirty-six members and visitors present. At the meeting the first two lectures were given. The first was by Mr. VK2 Division. Because of the absence of Les 2H1, Keith 2AKK took the chair for the evening and, after a short observation and other matters of approval (or were they?) and at the conclusion of general business, Gordon's tape machine began to play.

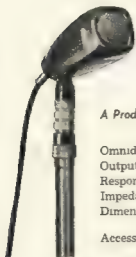
The first voice heard was that of Lionel 3CS being interviewed on the A.B.C. about the history of Amateur Radio in the Newcastle area. It was very pleasant to hear the voice of the old man, even though he was at the moment on the high seas and on the way to G land. The recorded interview had previously been heard in "Newcastle Digest," which is a local programme originating from 2NA each Tuesday evening. Lionel certainly has done a great deal for Amateur Radio and programmes of this type maintain the good tradition.







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Adelaide University having a shot at his B.Sc. and also won the A. H. Peake Bursary and the Commonwealth Bursary. As he had only just turned 15 years when he passed his Amateur Exam, he was not permitted by the regulations to be in the air but he put aside his ideas of Amateur Radio and concentrated on his studies and came out with his B.Sc. Honours with five gold and five credits. Nice work, Graham, hope to hear from you via SVA some day. Nice work Frank to you also, not only a prodigious student but a trump like that. Thanks for the letter.

Whilst on my holidays at Oakbank, I was summoned to the local Post Office and handed my usual mystery letter addressed to me in the form of a regular letter. This mystery letter has arrived for me without fail ever the last ten years and is probably the main reason why I cannot get to the Post Office to check their doors each time I pass and peer in a decidedly scared fashion through the window curtains. I have never been able to pin down the sender. However one of the local gypsies allowed me to cross her palm with a ten pound note (by the way, where is that ten pound note and who is the sender?) and plainly sees Norfolk Island natives with bones through their noses and Lord Howe Islanders with Morse keys shoved up their jumpers. This seems to ring a bell somehow, but as it was going to cost me a further ten pounds for any more visions, I cried quits. If I ever find out who this Arch villain really is, there will be quite a Hewitt and Cry after his skin. Very subtle, is it not?

Heard from Bart 5GZ with respect to the University Amateur Radio Club, which by the way has been somewhat inactive for a while because of studies, etc., plus the fact that the new engineering building is in the course of erection, which meant the aerial coming down for the moment. The SVA rig is in the process of having some of its modifications undone as somebody tried to improve the v.d. to the extent of confusing the issue. How tactful can I be? But all now is well, and by dint of a much hard work and the selling of jumper gear, they have been able to raise enough money for a new rig. Everybody is more than satisfied with its performance, especially as the aerial is only a piece of wet string at the moment. Have heard them on this week on c.w. on the 7 Mc. band and the signal was louder than ever to me.

Over the past two or three years or so the question of renewing my Amateur licence at the local post office instead of at the Registrar of Public Monies has reared its ugly head and also provided me with both targets and ammunition galore. Early this year, to my dismay and sadness, the Department apparently wearied of the position and allowed me to renew the licence at my local P.O. and thus lowered the curtain on a certain paragraph each month in the magazine. Imagine my surprise and gratification to receive, just before my holidays, a letter from the Department under the heading of "Final Expiry Notice" informing me that no trace of payment of my licence could be found and if I was still in possession of radio communication equipment and did not pay up, it was proposed to cancel my licence. Now what about it you mob. I follow your advice and look like having my licence rubbed out. What do I do now Max IAR? Anyway, I live to fight another day. It should be good for another three or more paragraphs. You beauty! Fax your licence at the local P.O.—See you!

Jack 8LR still enjoying his voluntary retirement, although he admits that he XYL manages to find plenty of work for him around the house. He has not been very active for some time now, but is tinkering with the idea of building up a burial rig for 40 and 80 mc and renewing acquaintance with some of the country boys with whom he spent many pleasant hours in QSO back in the "good old days".

The annual fees for the Divisional membership are coming in very well for the new year, but in case anyone has forgotten, now is the time to cough up the spondulike and become financial. Always remember that you are only a voice in the wilderness by yourself but as a united Division your voice can be heard in the right places at the right time. I know, I know, you don't think that, but try and get anywhere with officialdom on your own. You are not in the race. Look at it. They even threaten to cancel my licence. You Beauty—got it in again.

All the big things happen in VKS when I am on leave, and this year was no exception. Scarlett 213 was held in the room, a rare visit to our fair city, arriving by air on Wednesday afternoon, 17th April, and returned to VK3 on Monday, 14th ultimo, and the same to you. A good roll-up of his friends and XYLs, his friends' XYLs of course, were at the airport to meet him on his arrival, included in whom were Bo 3BO and XYL, Johnny De Cure 5GZ,

Harry Cooper, Mr. Peake 2nd op. to Harry 5GZ, Bobby Bruce and his 2nd op. Pete Slattery, the mother and father of Bob, and several locals unknown to my spy. One of the unidentified locals was Jack 315, together with his XYL, and I only found that out by keeping my ear to what the wild waves have been saying, but I am glad I did because I shudder as to what would have happened to me if I had slipped up on that one! So Williams took Al and his wife for a trip in the northern areas on the Thursday, with Bobby Bruce doing likewise southwards on the Friday, with Saturday being spent in meditation (if that is what visiting Amateurs do on Saturdays). Sunday saw an "open house" at the QTH of "BO", at which the aforementioned gang were joined by Ted 3JK, and I take it for granted that the conversation revolved between the merits of 7 Mc. from Ted and 3.5 Mc. from Johnny! At the airport on Monday, Mr. Peake and Bobby Bruce were among those waving goodbye, and Al for once in his life was speechless at the hospitality shown him.

Latest news from the Port Pirie Amateur Radio Club tells of their good fortune in acquiring their own club rooms at the Port

Pirie Aerodrome through the helping hand of the Council. Plans are in hand to organise working bees, etc., to paint the rooms and generally make it into respectable premises. The XYLs of 5GZ and 5ZES are starting to have the auction sales to pick up tables, chairs, cupboards, etc and a good time is being had by all. Two meetings have been held in the new rooms, and most of the business has dealt with the formation of a Youth Radio Club, the first meeting of which was held recently to the tune of 81 enrolments, much to everybody's surprise, only about 20 or so being expected. Now my spy, and female one at that, stresses the point that in such a venture the biggest problem is of course finance, and suggests that any of the city stickers who may be passing through Port Pirie at any time might like to drop off all those spare bits and pieces that have been cluttering up their shacks, possibly for years. A phone call to Pirie 335 will bring someone at top speed to take delivery, and of course, anybody who may happen to be in Port Pirie is especially welcome to drop in to either the senior club meeting on the last Wednesday night in the month, or to the youth club meetings which are held alternate Friday



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night. Well now, how is that? This club is certainly going places, and I hope that Ken IKM has not completely given me away and that I am not at this stage being a bore, whilst it is hardly my answer to his challenge, it at least shows just what can be done by a combined effort. May thanks Pamela for the news. May I call you Pam?

Stuart SMM can boast of a first class operator in the family and I don't mean maybe. His daughter, who is a Navy up at Darwin and if all can be believed, wields a wicked flat. By a series of strange coincidences Stuart has been able to hear Val on the odd occasion that she has happened to be in the shack of one or other of the boys in Darwin.

Clude SCF has at last found time to erect an aerial, having for many years operated on a piece of wire, and is tickled pink with the results coming back. I have not as yet heard the signal, but it will have to be good to beat the one from the piece of wire, although Col SCJ, who lives two blocks away, has an 8 meter which can speak volumes!

Ron SVH, being in temporary accommodation, cannot find the space to set up his gear. However, when the new house is completed, the gear of many months will be put into execution.

Leo SJZ is staging a come-back and his latest effort, let the boys know, is now above the treetops. Nothing as yet on top, but at least it is in the right position for further activity. Leo SJZ is among those missing at the moment and my spy has nothing to report on him. Possibly a search in the c.w. section of the bands might disclose some whereabouts, but until then silence reigns supreme.

Dale SZL, Gary SGR and Les SZLS are all fairly active on the v.h.f. bands, and above all are solid supporters of the S.E. monthly meetings, and with Col and Trev, Hutcherson, together with John Lehmann, help to keep the attendance number up. The last meeting of three are anxiously awaiting the results of the last L.A.O.C.P. examination and should know by the time these notes are being read John has had plenty of training in this "anxiously waiting" business, he recently became the proud father of a bonny bouncing baby boy. Naturally my internationally known warning of "DX before dishes" now becomes "Naviators before nappies"! Pardon me for teasing your thunder Col.

Col SCJ is still keeping his lunchtime ake on 1 Mc, and is in the process of building a new 10w. tx in an endeavour to compete with the other members of the network. Is this known as "keeping up with the Jones"? Careful, Col.

My espionage agent from Mt. Gambier gently draws my attention to the fact that down that way they have no v.h.f. sections—only the R.F. section, regardless of the type of ticket held! OK, OK, I will den my new suit of sackcloth and ashes, but I must admit the truth of that statement, even if nobody else will.

Usually manage to contact a couple of the gang at Mt. Gambier from Oakbank when on my holidays, but have heard plenty of signals from the areas just over the border, but no dice from the Mount. Incidentally, I have the group's request for a more formal invitation to the annual convention of the South Western Zone of the Victorian Division of the W.V. Unfortunately for me, and possibly fortunate for them, my leave ran out before the date of the convention and I could not accept their kind invitation. However, when informed of the news, the Secretary, I don't JACN, suggested that as I was passing through VIC's, "Ideal City" (his words, not

mine), it was hoped that I would meet up with some of the boys. Again unfortunately, etc., etc., circumstances did not permit of any response, and I have given up the idea. I might bob up at one of the meetings, who can tell? In disquiet of course, there is a price on my head for this.

Talking of Interstate, I felt that I detected a note of reproach in the challenge issued to me by Ken IKM in the April issue of the magazine, and I thought give it time. I'll come on the bandwagon! "If this be the case, I hasten to assure him that no offence was meant, but I have nothing, but admiration, for the scheme, and the efforts of all concerned. I used the words in the modern idiom, to wit, something new and therefore something of interest to all. Regarding the challenge, I am a glutton for challenges, but under the VK3 system of running the Division, the Council and President make all the decisions as to who organizes what and which, therefore I am not able to accept the said challenge without their permission, and everybody knows of my respectful obedience to that august body! Incidentally, in my remarks regarding the Brompton Boys' Club, the organiser was given the message, and I should have read Joe SJO and did he let me know? I can say that again.

My holidays were split up into three sections, and I am sure you will be glad to hear me to be greeted with the news that a VK4 had called several times to see me and was coming back. Grabbing everything within reach, I beat a hasty retreat to the challenge, for a week or so, only to find again on my return that the same VK4 had called and would return, and I could not say no, for I would you feel, especially after all I have said in these notes re VK4's? Anyway, I decided to stick it out and face the music, and I am glad I did. He turned out to be an S.W.I. named Ben Hall, an extra good bloke, more than keen on Amateur Radio and a good ambassador for VK4 to boot. Nice to meet you Ben.

No sooner did I recover from this shock to the nervous system, than believe it or not, I get a telephone call late at night challenging me to a duel at dawn next morning from an unknown voice who eventually turned out to be Ken ZAF, who had just arrived for a visit to VK4. I should have been prepared for it, because the VK3 scribe, in fawning glee and alluded to it a couple of months before, and the name Pincoff had been haunting me ever since. However, burying the hatchet (not, and it has been buried), I invited him and the family to lunch, and rushing out and getting some get-well cards to post to VK3 after the lunch, I sat back and waited for my fate to overtake me. Well it wasn't too bad, he brought along his army with him, and armed with gifts for my XYL, and grand and beautiful, if not, for me, and proceeded to charm the entire household with me grilling my teeth. Before you could say boo, my XYL was running around, digging some of my highly prized plants from the garden and cramming them in Ken's wife's (Joan) pocket, or wherever XYLs keep prized plants. My grandson was whistling in my ear at odd moments that Ken's daughter Judith and her girl friend, Margaret, better known in social circles as Daphne, and "Gladys" and Margaret, were two "lubberty girls", and finally, in my upset mental state I had sunk to the level of letting Ken blow down my ear on the subject of a.s.b. even sinking so low as to ask him for a diagram on the confounded subject. Well, I can't go any lower down the scale, although I am sure you will say well that we thoroughly enjoyed their visit and rate them as good acouts. We hope

they enjoyed themselves and will come again some day, but please, not for a while, let me regain my self-respect. As a final lump of add to rub in, I have heard a message, a present to me from the gang in VK3 oldsmobile, which he said they felt would help me to get up and march back to the shack and get back on the air. What was it? Well it was a thick book, green in colour, smelling a bit mouldy, all about wireless, with interesting facts and figures, and a lot of travel and, er, on what do I care, it was the 1912 edition of "The Year Book of Wireless Telegraphy and the Year Book of Wireless Telephony", what a month's 73 de VK3BS—FanSy to you.

## WESTERN AUSTRALIA

Well, another Council election has come and gone, together with an Annual General Meeting. As you know, it is required by the Constitution that nomination forms be circulated among members prior to the meeting, and it was most gratifying to me, personally, to know that every member of the Western Australian Division regarded my sample of duplicated work of such a high standard that they were loath to tear the sheet off and return it, with the result that it is now on its way to the Council to accept their responsibilities in the running of the Division and stand for election to Council. As you say, it boosts my ego no end (an ego is a thing like a cork with an air jet on it), but unfortunately it doesn't get new blood into the Council.

As for the new blood, I believe we have a visitor from 2S land, Jo'burg locality, who is spending his long service leave in VK and will be making his debut in the Division. He is the call sign of VKRZS and operating as KWM1 with adaptor on a.s.b. and c.w., to watch out for that one and give Peter a call.

S.A.B. reminds me that Ted GAG has been on 80 mx with the Suck Suck Blow and has much improved quality since the visit from me. It is not a bad thing, a funny stuff, but everybody's getting it now.

Wall GAG is still not satisfied about this business of sending out a signal with no carrier and only a few signals, and has been the best-dressed a.m. signals wears. However, he has settled for leaving a hole in the middle of the signal, and I think it is a good idea, like two times eight by seven plus six, doesn't it? I think a very potent word anyway. Wall GAG is still a bit of a puzzle to me, as he is, who can frequently be present at the test. I know this often happens when you press the key, but Allan has dozens of them. In the latest test, he was present, and he was at least one knee to work all these, and Allen even wiggles his eyebrows for effect. All right, well, I think it is a bit of a Hamfest, and you can actually hear all these frequencies! What's that? No! No, Allen will not be bringing it along to the meetings!

Incidentally, Ron GSW had a very busy time in Sydney for the Easter Convention, and spoke very highly of the arrangements made for their comfort. Congrats to VK4's, Ron was never very sure when the sessions began and closed, due to the talks that went on in the hotel bedrooms at all sorts of odd hours.

Over in the States, I have heard, as well as general business and policy matters, so F.E. have enough to keep them going for some time.

Another of our flying Hams is Dennis 6AW who recently returned to duty after six months in the States, and is sending me some color tv. over there, and I am sure you will read this, I believe we will have had a lecture from him about it.

Edwin George GGH, is still regaling us with technical titbits on Sunday morning and George certainly covers a range of subjects, and judging by the comments, is interested and wide audience. All the best, George, and keep it up.

Here's one to the books. Reading the mail one night and heard of SBU/say his XYL is doing some head for the ticket and I understand she's not the only one. Lance GLH also has an XYL who is doing some head for the ticket to you both and no doubt Allen EYL will be pleased to hear from you when you turn up on with your own signal.

Down Kattanning way, I find that Robbie 6XR has just completed a re-building programme in the home and now looks to be more serious about his hobby, and as a t.v.i., a.s.b. and putting a signal on the air again. Added to Robbie's list of jobs is re-wiring the quad, a freak job, which took a month exceeded Robbie's calculations, causing fracture of some of the copper wires. Once more up the tower, Bob.

Travis 6XJ is in the opening of the golf season this month, but after too many high scores and too many lost balls, we are betting he will be back on the air very smartly.

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AMATEUR RADIO, JUNE, 1963

RESIN CORE SOLDERERS  
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Herb KEO, a regular on 80 mc these nights, is putting the finishing touches of solder to his new a.s.b. rig. Herb's quad, and tower collapse in a stupor last month, but he's back in working order after using several pockets of band-aids to lash the tower together. Herb states "She's up forever now, string just isn't cold a touch up."

Charlie SXG has been using up 80 mc lately and has now packed his case and drifted eastwards, to attend the I.L.R. Regional Engineering Convention in Melbourne for a week, then some tripping around Victoria and South Australia for a few weeks. 73, ELS.

## TASMANIA

I record with deep regret the death on 6th April, 1963, of Ted Evans, VK7JZ, after a long and painful illness. He extended to Mrs. Evans and family our sincerest sympathy in her and their loss. Ted, at various times, had acted as President, Treasurer and Councilor of our Division, and had also been an active Amateur as well as a keen professional radio technician. His assistance in our Electrical Engineering Club and the Jamboree of the Air will be sorely missed.

Croby TCW has erected a more suitable antenna, particularly for the 100 mc band. Croby is also in the process of constructing an a.s.b. rig. Snowy TCH and Ken TKA spent Easter week-end on the yacht Moorina, as well as the first week-end in June and returned at another year of sailing mixed with operating mobile marine. Snowy was delighted when he worked a FZ station (I have never heard one) during Easter.

Ted TEJ has returned to VK7 after the Federal Convention in Sydney held in the prizes of the VK3 hospitality, and enthusiasm about the Young Radio Club scheme. We hope his enthusiasm will inspire a considerable response in the rest of us here in VK1.

April must have been a peak month for mobile stations, but Ray TEJ was the only one behind. Col TLE, Peter TFF, Graham ZIIP, Michael TZAV, John TJF, Les TKG, Len TKN, David TZL and Bill TZM, all round the country operating mobile, as well as Snowy TCH and Ken TKA mobile marine. These activities can only do good and the state of the electronic a considerable improvement as a result.

Congratulations to Sam TZM on receiving the certificate authenticating his W.A.S. Several new call signs have been heard, particularly in the Northern Zone. Bob TZRF and Graham TZBR are both active on 144 Mc and these young lads are looking both VK3-wise and south. Amongst older Amateurs, Den TDK is very active on 3 mc and has several mobile stations. Dave TDZ is working 30 mc. DX Phil TZAX has his new 6 mc gear and new shack fully operative. I also hear that Jack TJB will very soon be driving an RB to 150w, in his present rig with a 6DQ4A with most gratifying results. Charlie TKS has the rx

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side of his mobile rig operating near perfection now.

The lecture at the May Divisional meeting was on Traffic Signaling. In the electronic sense, delivered by Mr. Russell, traffic engineer for the Transport Commission. The result of our lecturer's plan was to "see around" the Hobart, and bears testimony to forethought and capacity directed to a very fluid subject. 73, TZL.

## NORTHERN ZONE

The monthly meeting of the Zone was held a line later this month because of Easter, and it was a very successful meeting. There was plenty of lively discussion during general business and the feature for the evening was a tape lecture by Harold ZAA on "Electronic Hunt". Our congratulations are extended to Harold for his very fine lecture and commendable style. It was thoroughly enjoyed by all those who attended, from the youngest to the eldest, and is sure to add impetus and more satisfaction to our next fox hunt.

The activity this month seems to have been centred mainly on v.h.f. bands. Two new call signs have appeared, Bob TZRF and Graham TZBR, and making nine active stations working 2 metres in the Northern Zone. The local boys have been given a chance to try their gear over the 2m band. David TZAL and Rick TZAT have both been very active on Flinders Island and many contacts have been enjoyed between the mainland and Launceston. Some of the stations are only running low power of about 3 watts and the signal reports received have been surprisingly good.

Our congrats. to Den TDK for his fine effort in the VK-ZL DX Contest, taking first place for VK1 on 100 mc and making a fine showing. He has been casting his eye out for suitable relay. He may come up with that electronic key soon.

Very pleased to hear Bob TZBR on 80 mc and getting well and better too. That Graham TZBR is working out well. These young lads should do well and when joined by their confederates, Joe Jellison, there will be no stopping them.

Sorry to hear that Ray TZRF has been on the sick list—lashed out early in the year. In bed—later reports say that he is now back at work, so it takes a lot to keep you down Ray!

Ted TZBR was very pleased to make contact with the Flinders Island boys TZAL and TZAT. It was the first long haul contact—130 miles in 4 minutes. A fine achievement. Graham TZBR at his c.w. and sat for the exam. a few weeks back, and soon should have his full call.

The 30 mc band has been very active lately during the afternoon and Ted TEC has been heard at full cry on the key, raking in his share. Also Den TDK has been picking a new mobile station. New country more than enough for his D.X.C.C. This is the second time Den has worked his D.X.C.C. having done it on his VK1 call.

John TJF has his tower finished and erected, a 21 ft. triangular steel type, and he hopes it will stand the 110 m.p.h. plus winds OK. It should soon be sporting a quad on top. This may be more of a problem in the wind than the tower, anyway here's hoping. His new tx has been on the air, but is presenting more problems than thought possible, mainly with parasitic oscillations in the final. Really vicious key click, but you also have a lot about neutralising pi coupled finals, too!

Very pleased to meet two visitors to our last meeting—John Kenrick and Lindsay Leeson, and is studying for his full licence before obtaining his call sign, and Frank Richards, who is keen to obtain his A.O.C.P. Pleased to hear about you all, and wish you every success. 73, Johnny Fox.

## NORTH-WEST ZONE

As our usual scribe has seen fit to go globe trotting I will do my best to find some news. Don't be fooled by the tx originating from 9th. At this time of the year, when the sun is TMS it will only be that it is not yet acclimated to Burnie. We are all anxiously awaiting for David to come up on what he describes as his first secret weapon. If he is right, the quad it will be diagonally powerful. George is really sold on a.s.b. Would like a bit more distance between the 2m and 3m bands. Ken TCH appears to be having some success portable. Also notice that Sam is still receiving the usual flood of DX cards. Don't visit from TJF the other day. Do mend that portable-mobile John so that I can locate you. Was thrilled to have a QSO with Keith KXK from the rig of ZLIAM. Auckland, the other night.

Some drastic changes are coming to this Zone due to the fact that the 144 Mc band will be held at private homes soon. Therefore we will be able to accommodate a limited number only. Bad luck chaps, but you asked for it. Remember that what you get out of

any organisation is commensurate to what you put into it. Perhaps we could blame tv.—the scourge of Hamdom.

We are hopeful that some aspiring (possibly perspiring) Hams will face the next Exam. The best of luck chaps and if you need any help, it will be forthcoming.

Have just returned from the May social meeting. Quite a good roll-up. Nice to see Ted and TJF again. It's kept us busy, but we are able to revise our ideas. Some interesting lectures were delivered and I am sure that we all learned a lot from them. Noticed George and Ken deep discussion on some aspect of sideband. They are going to cover us all if we don't put up some sales resistance. 73, TMX.

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